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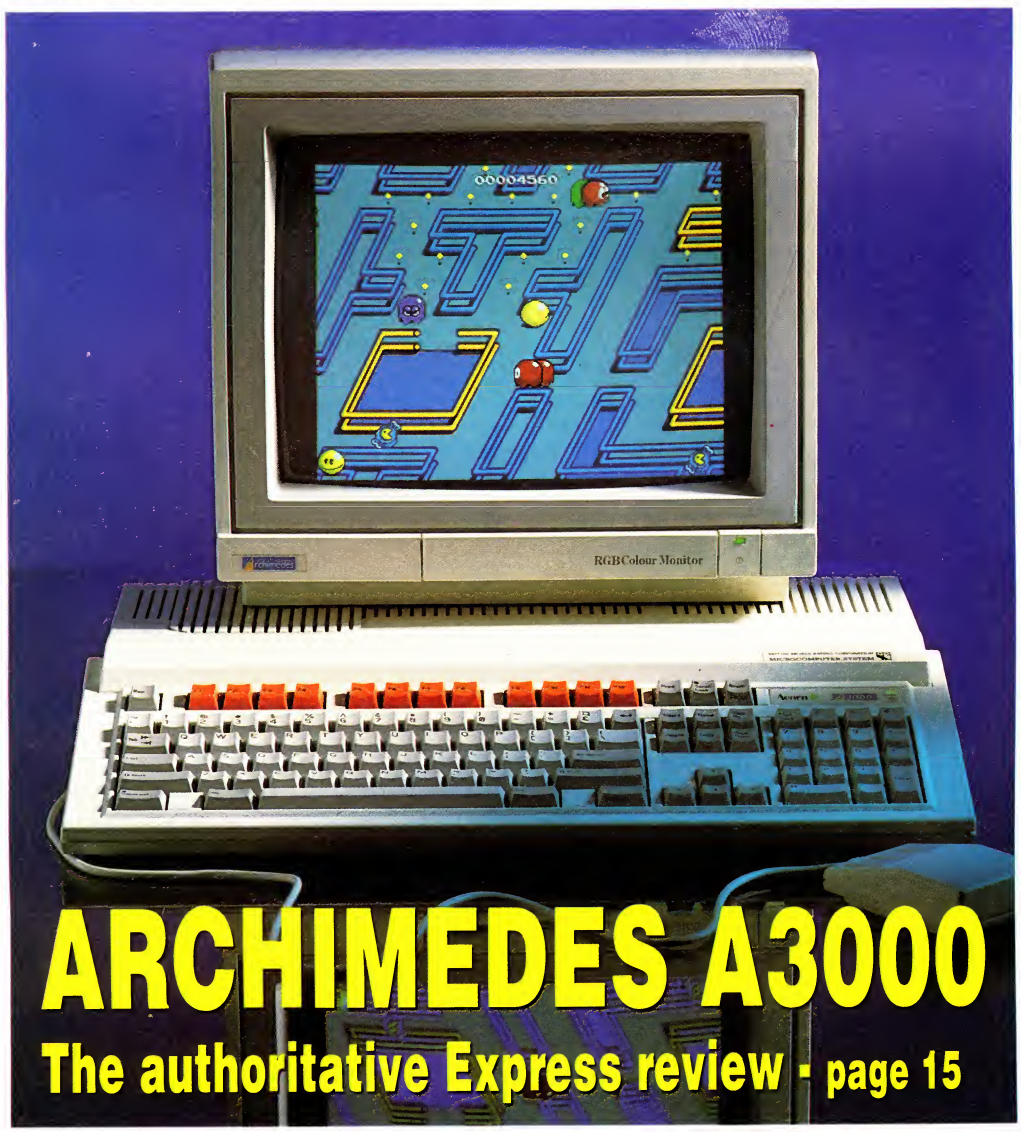
DREAM MACHINE?



ARCHIMEDES A3000

The authoritative Express review - page 15

THEY'RE COMING!

COMPUTERS WITH BRAINS *page 2*

How two games earned him £300,000

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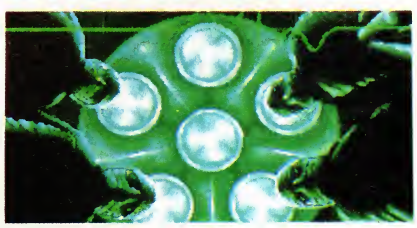
DREAM GAME?



WEIRDEST GAME OF THE YEAR

Optical illusion?

The World's first erasable optical disk *Page 31*

Amiga • Atari ST • PC • PCW • Spectrum • CPC • C64 • QL • BBC • MSX SECTIONS FOR YOUR MACHINE

HUMAN COMPUTERS FOR 21st CENTURY

Remarkable optical technology arrives

• Seeing is believing: Inspiring opticals

The first commercially available rewritable optical disk has been launched into the UK.

Alphatronix' Inspire has been available in the US for six months now but was launched at the OIS Show last week at the Hammersmith Novotel.

The remarkable device is available for PC compatibles and shortly for the Apple Macintosh. The 5.25 optical disk is capable of storing 650 megabytes – the equivalent of 16 40Mg hard drives. It will cost £6,000.

Whilst out of most people's price range this is not incredibly expensive given the amount of research and development money ploughed into rewritable optical disks – the one time "holy grail" of storage technology. When volume sales come in to the equation we can expect to see prices fluttering downward.

The system can address seven drives at the same time offering 4.5 Gigabytes capacity with an average "seek" time of 83 milliseconds. The technology of erasable optical disks is one which several major firms are working on to capture a portion of a potential multi billion dollar market.

It is widely believed that optical storage will replace magnetic storage entirely since it offers staggering capabilities magnetic media cannot reach. One disk can store 80 different versions of The Bible...

Report claims neurocomputers will take over

Computers with human–like brains will affect nearly every aspect of our lives in the next century, according to an astonishing report published last week.

The 324 page study *Neurocomputing: Technology Impact Report* by US Marketing Survey Company Frost and Sullivan claims that machines which can learn, see, hear and above all, make decisions, will be a part of every day life in the 21st century.

Neurocomputing – the use of multiple neuron-like processors to form a brain-like computer architecture – has been floated as a theory for many years. Indeed, millions of pounds is being spent by the likes of Texas Instruments researching this area.

Many view it as being in the domain of sci-fi. But Frost and Sullivan, whose reports are used by US companies for product planning, believes enough breakthroughs will be made over the next few years to take computing into a new era.

The new generation of computers will be able to 'learn' and interpret what they experience in the same way as children. Information is not stored in a neural computer but exists as patterns of connections amongst the processing elements.

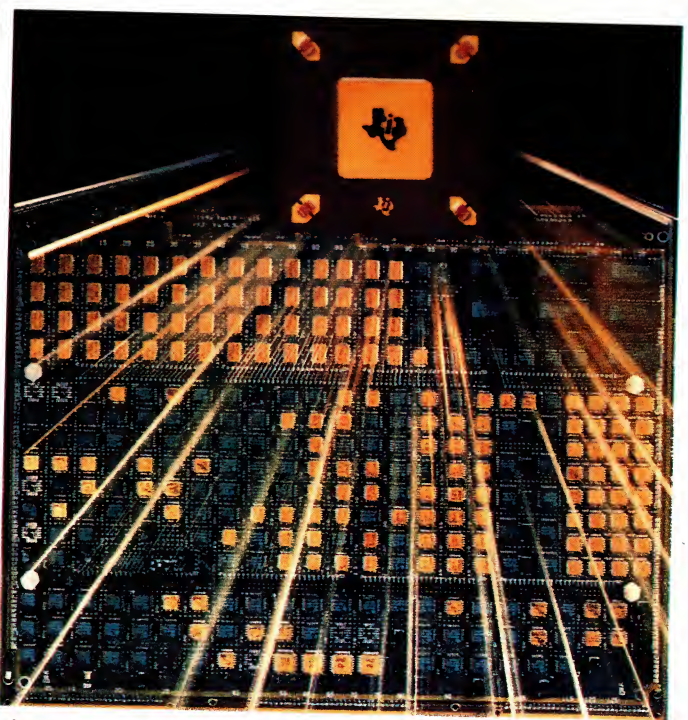
Speaking from Austin, Texas leading TI technician Andy Penz told Express: "We are working on applications which require interfacing with cameras, microphones and sensors but there's a flood of data to be taken into account. It's kind of like trying to drink water from a fire hose."

He expressed reservations about the report. "I don't think I'll see 'human computers' in my life time but we can make machines which will work in parallel with us. That's more difficult than it sounds. Throwing computers at a problem doesn't solve it."

Low level work has been going on at Brunel University in Uxbridge for more than ten years. Director of neural network research John Stonham commented: "We need to make some real breakthroughs before this can become reality.. But it is a growth area.

"The trouble is we have to understand our own processes before we can start programming computers to emulate us."

Either way it will be a several years before this appears in your local computer store.



• It may not look much like a brain – but this is the state of the art in artificial intelligence

Post haste

Some time next month that nice Postman Pat (and his black and white cat) could be dropping by, courtesy of Alternative Software.

Pat is appearing in "the first licensed budget game" for £1.99 on 8-bit formats. Young fans of the TV show can take on his postal round and meet the villagers of Greendale. Alternative has stuck in sophisticated gameplay for more 'mature' lovers of the character. 16-bit versions should arrive later this year.

• Post impressionism: Pat and Jess are coming to your micro

ELITE II TO TAKE OFF

The long awaited follow up to space trading game *Elite* is on the way.

However, fans of the game will have to wait until autumn next year before they can see *Elite II*. The game had been in development for four years but was restarted last October to fit in with advances in home computing technology.

The original *Elite* has sold some 600,000 copies and is widely regarded as one of the most addictive games ever devised. Programmer David Braben warned gamesters to hold on. He said that the game involves a great deal of programming and is "far from complete".

However, we can expect to see something quite different from the original, he said.

• Elitist dynasty: Son of Elite on the way

ALAN SUGAR'S LATEST RACKET

Mr Amstrad's charity pledge

Amstrad boss Alan Sugar has personally organised a charity tennis night out likely to raise £150,000.

For the first time in its 21 year history Amstrad has tied up a special sponsorship deal. The Amstrad Pro-Celebrity Tennis Tournament at Albert Hall on 23rd June will feature TV stars, sports personalities, captains of industry as well as professional tennis players. All will be playing to raise money to combat the crippling disease Muscular Dystrophy.

Amstrad has taken over the seven year old tournament from Harrods. Lenny Henry, Frank Bruno, Kevin Keegan, Sir Richard Attenborough, Nigel Dumpster, Melvyn Bragg, Terry Wogan, Bruce Forsyth, Bobby Moore, Michael Aspel and Richard Branson will be amongst the celebrities taking part.

They will be paired up with tennis players such as Amritraj, Fleming, Gottfried, Lloyd, McNamee, Kriek and Shiras. The whole event, perhaps predictably, will be compered by Jimmy Tarbuck.

• Sugaring the pill: Pro-celeb tennis tournament

Even the host Alan Sugar will be climbing into his shorts for a game of tennis. Apparently he's "a very fit man".

A spokesperson told *Express*: "We've always had a policy of giving money to charity but we've never expected to be patted on the back for it. But money is desperately needed for Muscular Dystrophy and Alan felt we should get involved."

In true Amstrad style the event has been touted as "a bloody good night out". Anyone who fancies joining them raise much needed money should call 01 589 8212. Tickets cost between £7.50 to £16.

Saucy pranksters bug IBM chiefs

Internal bulletin board abuse within IBM is causing something of a rumpus among company management.

One employee in the US has already been suspended from using the electronic service and new rules have been drafted in to combat the problem. Notoriously sober company chiefs are hopping mad because some employees are are running saucy messages through the service. Confidential information concerning staff movements and the like are also turning up on the networks.

Electronic conferencing is an everyday occurence at the huge corporation with some 300 systems up and running. IBM is keeping a close eye on its boards in case its rules are breached.

The curious pain killing keyboard goes Amstrad

The Maltron keyboard, designed to reduce strain on computer users hands, wrists and forearms, is to be made compatible with all Amstrad PCs.

Heatherington Associates which sells the Maltron has recently altered its gadget to work with IBM PCs. Interest has been growing in the curious keyboard from manufacturers and users alike as concern grows over the painful ailment RSI. Soon, any worried Amstrad users will be able to plug the keyboard in.

• The shape of things to come? New keyboards may prevent pain

Repetitive Strain Injury affects those people who frequently use keyboards. The computer age has brought this strange disability on because there is no natural break from tapping (such as changing paper or hitting carriage return).

The "ergonomically designed" keyboard puts keys which are most frequently used near the front with others spaced out according to frequency of use. It costs £295. More on 01 461 0621.

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NEW COMPUTER EXPRESS

COMMENT

Future shocks? Not really

The Frost and Sullivan report assures us that 'thinking' computers will be with us in the next century. Looking into the future is a dodgy business, as you can see from those old fifties sci-fi movies which had us all in the 1990s walking round in silver suits, holidaying on the moon and only eating one protein pill per day. The reality is different: jackets in Top Man now look remarkably like those of the fifties, we holiday in Marbella and eat far too much of everything.

The 'revolution' promised will come quietly and largely unnoticed. After all, in the last thirty years the transistor and microchip have revolutionised the way everyone works and lives, but we still lead largely the same lives, wear the same sorts of clothes, do the same sorts of thing in the evening and eat the same sorts of food – just do it more often. Someone stuck in a lift since 1959 would have no difficulty adjusting to life now; Cliff Richard's still around.

For most of us the dream machine is not an expert system advising us on pension planning, it's one that will do the washing up, hoover the carpet and clean the bathroom.

The reality may be less interesting. Most neural network research will no doubt be for Defence. Thinking computers would be sitting on our doctors', dentists' and accountants' desks, giving them an instant and informed second opinions, and there'll be increasing use of decision-making smart robots in production line work and dangerous jobs.

Our work lives will be far easier, and we will have more leisure time; but thinking computers aren't going to change our personal lives for a while yet. And sci-fi visions of a robot indistinguishable from humans that learns, feels, and loves are just romantic fiction. After all, we can produce learning, thinking and feeling beings now by the traditional process. And it's a good way to spend all that extra leisure time.

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VIRGIN'S RETURN

Virgin Games is planning to launch an armada of coin-op conversions and sports simulations this year.

The label had withdrawn somewhat from the software melee, concentrating its work on sister divisions Melbourne House and Leisure Genius. They concentrate on RPGs and board games respectively.

Virgin has now decided to let loose all its big name coin-ops including *Double Dragon II*, *Shinobi*, *Continental Circus*, *Gemini Wing* and *Ninja Warriors*.

In addition gamers can expect to see a line up of sports simulations based on American Football, Soccer, Ice Hockey, Baseball and Basketball.

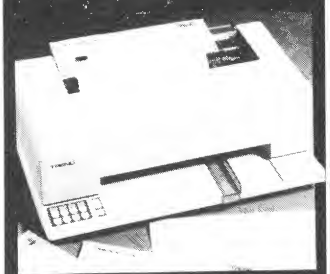
"Virgin Games is back with a vengeance and we've got some of the hottest arcade licences of the year," said Virgin Mastertronic boss Nick Alexander. "We are committed to taking this label right to the top of the charts and keeping it there."

• Virgin let loose: Alexander is confident new titles will score

Sssshhh: It's the super quiet printer

There's a new peaceful dot matrix printer for office workers who can't stand the horrid sound its louder counterparts make.

The Trend 7080 operates at a noise level of less than 48 decibels in "hush" mode and is claimed to retain all the capabilities of noisier printing. However, you'll have to fork out £835 for the privilege of a quiet life.



• Trend towards quietness: So quiet you can't hear the pins drop

Electronic tagging

If you've ever used one of those plastic label makers to personalise your belongings, or to make name tags for persons attending a meeting or conference, you've probably noticed how long it takes and how messy the plastic strips are.

Channelmark UK has designed a software package for the PC and its compatibles which allows you to print hundreds of labels quickly and easily from a list of names held on disk.

Name Tag Kit lets you type names and addresses or any other information directly into the program or to import text files from another program such as a database or word processor. Names can be sorted into any order, then printed on the sticky labels provided.

Included with the software is 100 peel-off labels, 100 cardboard name tags and 100 plastic holders. The mechanical label-maker does offer one advantage though, its price. Name Tag Kit weighs in at a hefty £74.95. Channelmark UK can be contacted on 0276 685 761.

Sample Minds

ST musicians have a new version of the popular ST sound sampling package, Replay. Still under development, the upgrade should be completed in a couple of months, and will feature 8-/12-bit analogue/digital conversion, multi-voice capability, drum and synthesiser software and a new editor. Tony Racine of 2-Bit Systems commented "Theoretically, you'll have up to eight voices – without loss of sound quality". The price will probably be £120-£130; details from Microdeal on 0726 68020 or 2-Bit Systems on 0582 457348.

Who's making all the lolly?

16-bit protagonists Atari and Commodore have released financial figures for the first few months of this year.

Commodore upped its earnings by an impressive 38 per cent with worldwide sales of $210.2 million. The firm pocketed profits of $12.4 million.

In contrast Atari's performance was less convincing. The Sunnyvale, California based company reported profits of $3.28 million compared to $5.67 million for the same period last year.

Both companies are heavily involved in Europe. Commodore reckons some 70 per cent of its income comes from this side of the Atlantic. And whilst there are no figures for Atari it is understood its Euro split is considerably more than 50 per cent.

Bigger, better Which?

Confident Cahners – organiser of the *Which Computer?* Show – reckons some 90,000 people will be visiting the huge business event next year. The already enormous show is being held in April instead of February and Cahners reckons it will increase attendance by 36 per cent. This year's show attracted 66,678 visitors and 500 exhibitors.

• It's the size that counts: *Which* '89 will be bigger and better

Watching the wildlife

Computers are helping the the Royal Society for Nature Conservation to sort out its bugs, beetles, birds and bats.

Biological sites and species specific software programs are being developed which will allow various wildlife trusts to monitor the distribution of wildlife around the country.

The RSNC does all its work on PCs and has just taken delivery of a new 386 Opus PC to deal with the "incredibly complex" work.

US finds Apple tastier than IBM

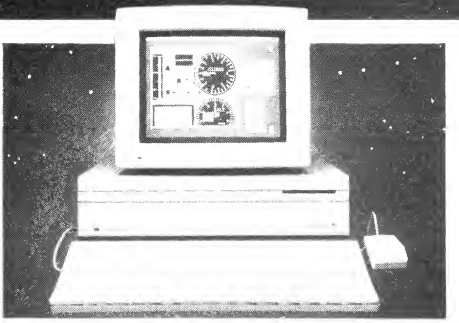
American purchasers bought more Apple computers last year than IBM machines.

According to leading market survey firm Dataquest, US computer users bought 1.27 million Macs and Apple IIs as opposed to 1.23 million IBM PCs.

This is the first time throbby IBM has been overtaken by Apple. Dataquest puts it down to a "bad year" for IBM rather than any special desire by American punters to ignore PCs for Mac technology.

Many IBM customers were put off by the complexities of the PS/2 launch and the deletion of IBM's PC/AT. Punters are also being given a huge choice of cheap PCs from the Far East.

Although IBM is quietly nursing its hurt pride it is widely expected that "Big Blue" will regain its lead next year.



• Apple pips: Mac is giving IBM the big blues

YOU WIN!

8-bit Atari owners get their way

Hitherto disgruntled Atari 8-bit owners are to receive a machine specific column of their own in New Computer Express.

Vociferous users of the machine have been lobbying Express through letters and telephone calls since the magazine was launched last October. Now, the publishers have decided to give way and run a column alongside those of minor machines such as the MSX, QL and all major machines every week.

Earlier this month Express challenged owners to write in requesting their own spot. Within three days of the issue hitting the news stands we had received more then 40 letters.

"It's fantastic to be able to offer people exactly what they want," enthused Express publisher Greg Ingham. "Who could ignore the wishes of so many computer users?

"We found that although many owners of the four Atari machines have upgraded to the ST they are still using their old machines. And that the machine attracts and extraordinary number of user groups dotted around the country."

A spokesman for Atari commented: "We're delighted that the upsurge in interest for the 8-bit machines is being reflected in the pages of Express." The first column will appear next week.

Meanwhile, long established Atari 8-bit mag Page Six is to be renamed New Atari User. That mag was merged with Atari User at the beginning of this year.

• 2, 4, 6, 8: Atari owners celebrate

Prof's dual aim

Boffin Professor Heinz Wolff will be chairing a seminar on raising software quality with the double aim of raising cash for charity.

The cost of errors in software in the UK is estimated to be £500 million per year. The seminar – to be held at Cambridge University on 29th June – will include speakers from Acorn and GST Professional services. It is hoped that £12,000 will be raised for the Cambridge Hospice for East Anglia.

阿赊通特异特中国措施 ASHTON-TATE'S CHINESE MOVE

Business software developer Ashton-Tate is to become the first Western publisher to produce Chinese language versions of its packages.

The American firm has signed an agreement with China's Ministry of Machinery and Electronics Research to produce database management pack dBase IV and integrated software compendium Framework III.

China is fast emerging as an enormous opportunity for PC marketeers. English versions of Ashton-Tate products are already used by the Chinese. A Chinese version of dBase IV should be ready by the summer.

"It has always been our policy to translate software into foreign languages. We're already offering products in 13 different languages," said UK boss Paul Sloane.

Japs bop to coin-op soundtracks

Japanese tastes have raised Western eyebrows before – but they seem to get stranger and stranger.

The latest fad to send Japanese youngsters wild is recorded albums and compact disks of coin-op soundtracks. Sega is selling "loads" of recordings of the likes of Thunderblade to punters who go home and relax to the electronic new sound "music".

There are no plans to subject the British public to this although the Town and Country Club in London holds "Dreamscape" evenings every now and again based on games technology and music.

TOP 20 *Full Price* GAMES

1	Robocop OCEAN	*Spectrum, C64, CPC, ST, Amiga, MSX*
2	Populous ELECTRONIC ARTS	*ST, Amiga*
3	Microprose Soccer MICROPROSE	*Spectrum, C64, C64*
4	Run the Gauntlet OCEAN	*Spectrum, C64, CPC, ST, Amiga*
5	Dragon Ninja OCEAN	*Spectrum, C64, CPC*
6	Emlyn Hughes AUDIOGENIC	*Spectrum, C64*
7	Fun School 2 DATABASE/MANDARIN	*Spectrum, C64, CPC, ST, Amiga, BBC*
8	Renegade 3 IMAGINE	*Spectrum, C64, CPC*
9	Operation Wolf OCEAN	*Spectrum, C64, CPC, ST, Amiga*
10	Football Manager 2 ADDICTIVE	*Spectrum, C64, CPC, ST, Amiga, PC*
11	Middle Earth MELBOURNE HOUSE	*Spectrum, C64, CPC, ST, Amiga, PC*
12	Arcade Muscle US GOLD	*Spectrum, C64, CPC*
13	Running Man GRAND SLAM	*Spectrum, C64, CPC, ST, Amiga*
14	In Crowd OCEAM	*Spectrum, C64, CPC*
15	Double Dragon MELBOURNE HOUSE	*Spectrum, C64, ST, Amiga, PC*
16	Football Man Exp ADDICTIVE	*Spectrum, C64, CPC, ST, Amiga*
17	WEC le Mans IMAGINE	*Spectrum, C64, CPC, ST, Amiga*
18	Giants US GOLD	*Spectrum, C64, CPC*
19	Afterburner ACTIVISION	*Spectrum, C64, CPC, ST, Amiga*
20	Pac Land GRAND SLAM	*Spectrum, C64, CPC, ST, Amiga, MSX*

TOP TEN *Budget* GAMES

1	Treasure Island CODE MASTERS	*Spectrum, C64, CPC*
2	720 KIXX	*Spectrum, C64, CPC*
3	Turbo Esprit ENCORE	*Spectrum, C64, CPC*
4	Fast Food CODE MASTERS	*Spectrum, CPC*
5	Ghostbusters MASTERTRONIC	*Spectrum, C64, CPC*
6	1942 KIXX	*Spectrum, C64, CPC*
7	SAS Combat CODE MASTERS	*Spectrum, C64, CPC*
8	Spy Hunter KIXX	*Spectrum, C64, CPC*
9	Twin Turbo V8 CODE MASTERS	*Spectrum, CPC*
10	Hardball KIXX	*Spectrum, C64, CPC, Atari 8-bit*

RE re-entry · NE new entry · Last week's positions

Compiled by Gallup

The charts shown are based on the Open Market, that is retailers who stock a broad range of products. All charts shown are copyright of Gallup.

TOSH TAKES TOP LAPTOP SPOT

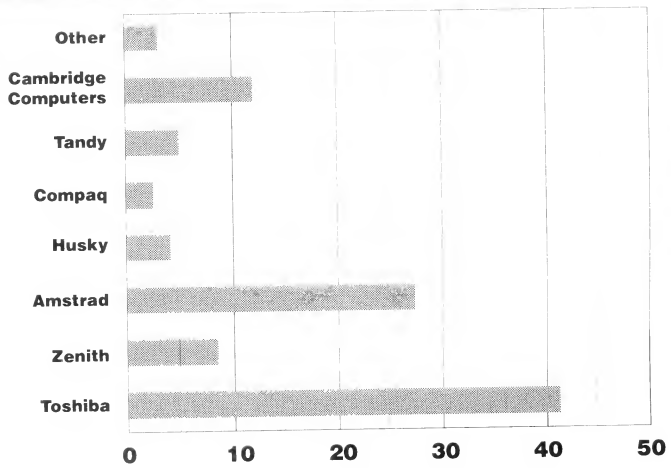
Famed portable manufacturer Toshiba is still top of the laptop pops according to market researcher Context.

Last year it managed to lap up more than 40 per cent of the UK portable market. Amstrad is just behind with it low cost PPC range. Cambridge Computer shows a healthy 15 per cent with its competitive and handy Z88.

It's worth noting that as market leader Toshiba does not manufacture any desktop PCs. It dominates the higher end of the market with its 1200 and 1600 models.

More than one in nine micros bought last year were portables. In effect, the portable market is now longer a speciality niche but a most important sector.

And according to market research published by Romtec last week the biggest selling portable last month was the Compaq SLT 286. That machine though is very much in the domain of power business users. Romtec puts the Amstrad PPC 640 neck and neck with the Toshiba 1200 at 17.2 per cent with the PPC 1512 coming in at 13.8 per cent.



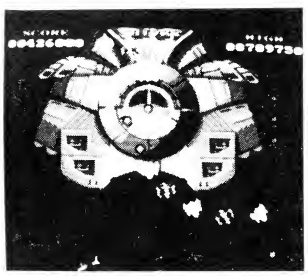
Snippets

Company origins are always fascinating. For instance, Tandy wasn't always a giant electronics retail outlet and PC manufacturer. When the company was started 70 years ago it was a Fort Worth based tannery.

Hybrid Hybris

From June 1st Amiga owners will be able to buy a "special edition" of Discovery's game Hybris – it includes a free copy of Arkanoid.

Distributor Inter-Mediates has just picked up the rights to all Discovery games in the UK. They were hitherto handled by Gainstar. Gamesters hoping to get hold of Discovery games including Sword of Sodan should call 0279 726585.



• Hybridisation: Special edition to include Arkanoid

Britain's brightest event for Commodore users is back – and it's bigger (a record 100 stands) and has a whole new look . . .

- ★ **Meet the top games writers – Jez San (Starglider), the BitMap Brothers (Xenon and Speedball), Andrew Braybrook (Paradroid and Uridium) and Stan Schembri (The Last Ninja).**
- ★ **Greet Commodore's Guru Jim Butterfield at the ICPUG Question and Answer sessions.**
- ★ **Beat the Author competitions – in which visitors can take on named software writers and attempt to beat them at their own game.**
- ★ **Take a seat at the first show seminar and workshop programme and discover the secrets of programming, making music on the Amiga, graphics – and much more.**
- ★ **Treat yourself to a visit to Leisureama and discover the fun things you can do with an Amiga.**

SAVE 50p

13th Official **Commodore** computer show

Friday June 2 10am to 6pm
Saturday June 3 10am to 6pm
Sunday June 4 10am to 4pm

Champagne Suite & Exhibition Centre
Novotel, Hammersmith, London W6

Bring this coupon to the Show to get 50p per person off the normal admission price of £5 (adults), £3.50 (children).

Valid for up to four people.

50p OFF

13th Official **Commodore** computer show

Friday, June 2, 10am-6pm
Saturday, June 3, 10am-6pm
Sunday, June 4, 10am-4pm

Champagne Suite & Exhibition Centre,
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Nearest Tube Station: Hammersmith

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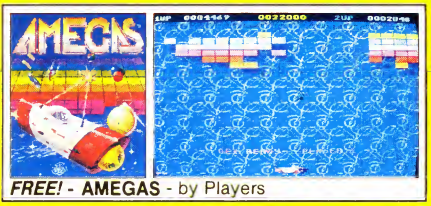
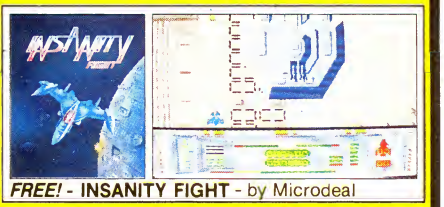
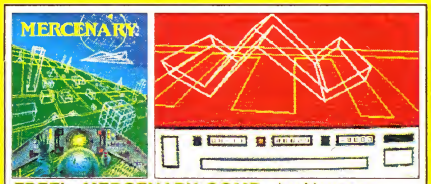


FREE! - AMEGAS - by Players



FREE! - INSANITY FIGHT - by Microdeal

FREE! - ART OF CHESS - by SPA



FREE! - MERCENARY COMP - by Novagen

FREE! - BARBARIAN, ULT WARRIOR - by Palace

FREE! - TERRORPODS - by Psygnosis

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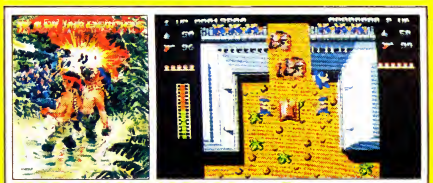

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EXPRESS MAIL

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Express Mail, 4 Queen Street, Bath, Avon BA1 1EJ

PS. Sorry, we just don't have the time to give personal replies, whether you include an SAE or not. We're too busy putting Express together!

YOU'LL HAVE A JOB

I thought I would put pen to paper regarding the small news item (*Express* 26) concerning the shortage of staff in the computing industry.

I'm 20 years old, have 10 'O' levels, 2 'A' levels, Maths and Economics, and next month I'll be sitting my final exams on the second year of an HND in Computer Studies.

For the past two months I've searched high and low for a computing job, generally if around 'trainee programmer' level, but have met with no success – most companies consider me too inexperienced, even for a junior post.

From my recent experiences, or should I say inexperiences, I can see the shortage of staff increasing unless firms are prepared to lower entry standards – OK, so firms want to ensure that they get good calibre candidates for a job but unless they lower their requirements they'll have no candidates at all!
Timothy Smith, Bagillt, Clwyd

● ***Hmm; it seems from your letter that employers have only themselves to blame for the shortage. Perhaps we could have an employer's perspective on this?***

TOSSED ASIDE

Last week I wrote to Atari at their HQ in Slough asking for info on their new TOS ROMs for the ST computers. I asked for prices, availability and if they would fit in my 1040.

This week I actually got a reply from them! I opened the letter and found an Atari compliment slip and..... three photo-copied pages from *ST World* magazine, which had a preview of the TOS 1.4 ROMs last February. No prices and no other info at all.
C Parker, Pill, Bristol

● ***You got a polite reply though! Obviously you didn't go through their PR department.***

PROTECT AND SURVIVE

On the subject of games copy-protection, the best I have yet come across in terms of user-convenience is my Amiga version of *Carrier Command*.

On booting the original disk with the left mouse button down, you can then make a backup at extremely fast speed (if only Amiga-DOS went this fast), then the actual copy protection is the familiar "enter word number so-and-so from Novella" – a pain yes, but much faster than the "enter master disk" method.

This could still be improved by printing the Novella in black letters on top of very dark grey paper, thus defeating certain hundreds of those using the office photo-copier to make copies for their pals or whatever, whilst still being easy to read in good light.

None of these methods would stop the oh-so-clever hack who would patch-out the copy-protection code anyway, but if all related magazines would stop allowing software-swap contacts through the classifieds then the hack would have no new contacts to show off to by circulating

• **Are novellas the best form of copy protection?**

his cracked disks. Too many of these swappers are posing as legitimate users by calling themselves "demo-swappers" etc, – if they really wanted to do this they would join, say, ICPUG and get all the official demos and PD stuff for free, provided they send blank disks and return post.

Finally, these novellas should not add any more to the price of a game if the manufacturers would stop bundling unwanted audio-tapes and childish posters and stickers. What do you think?
Alex, Berwickshire

● ***I think you have a good point. Novellas cost, we reckon, a couple of grand or so to produce, which shouldn't add more than 10p or so to the final cost of the game.***

As well as being a more civilised way of copy protecting games, novellas are jolly good interesting things too, so long as you get good writers to do them. Any software houses interested in getting one written should get in contact with us here at Express...

FAVOURABLE WIND

D Hughes (*Express* 26) is right in saying that the majority of computer games for the sixteen bit machines are too long and hence expensive.

An example of what short games should be like is *Sidewinder* – a classic shoot 'em up for £6.95 if purchased from a mail order company (£19.95 is its recommended retail price. This also says how cheap and efficient mail order is).

It has excellent graphics and ear rumbling sound effects. In one of my other computer magazine it says "guaranteed to overwhelm the senses".
Matthew Findlay, Uppingham, Leics

● ***I think it was launched at a tenner, wasn't it? We like Sidewinder ('best budget release on the Amiga' says our games man Rik Haynes) but the only thing we would ever describe as 'overwhelming the senses' would be ten pints of Royal Oak.***

IT ALL ADDS UP

Please could you inform me as to whether there is a similar scheme for teachers to buy computers, as there is for students to buy them? If none of these options is open to me, could you give me details of the cheapest place to buy a new Amiga 500 and modulator and please (again!) could you tell me what the best printer in the sub-£250 price range is (I'm very ill-informed y'know).
John Hunter, Middlesbrough, Cleveland

● ***There's no scheme for teachers as far as we know – you'll have to try a bank loan or something. As for the cheapest place to buy an Amiga – read the ads in Express! That's what they're there for...***

Printers: my personal favourites in the budget 9-pin dot matrix stakes are the Panasonic KXP1081 (£110 or so, nice and fast); the Citizen 120D (£120); and the Star LC-10 (£170, lots of fonts and wacky letter sizes, and probably the option to take if you can afford it). Or there's the colour Star LC 10 for £220.

IS EXPRESS PROSTITUTING ITSELF?

Oh, how the mighty have fallen! I refer to your closing comments (*Letters, Express* 27) calling for stories like "The

BEST FORM OF DEFENCE IS A HACK

The public is being led to believe that Hackers are as bad a problem as the ozone hole or football hooligans. They are a problem but not that serious a one.

Now it turns out that a conservative MP is leading a private members bill to have hackers imprisoned for up to 10 years. 'We must succeed!' cries Mrs Nicholson, members bill in one hand, modem in the other!

She gives the impression that she is on a holy crusade against the infidel!

If you want to deter them, impose hefty fines instead of hefty prison terms or better still confiscate their equipment as well.

If, however, a breach of National Security is proved and that it was done deliberately, then the hackers deserve everything they gets.

I think I'm right in believing that Fleet Street has blown the story out of all proportion as it usually does.
Simon Howard, Peace Haven, East Sussex

• **Does Emma Nicholson's Bill to beat the hackers go too far, or not far enough?**

● ***Well, according to the Act, it would be up to judges whether or not they fine or imprison convicted hackers, or confiscate their tools – all these are mentioned as options in section 2 of the Act. I think the main problem would be getting a judge who really understood what was going on; while I'm sure most Justices would be able to take the case on its merits and be able to tell the criminal from the harmless enthusiast, I have a horrible premonition that the first hacker to be convicted will be a mere peeper who has the misfortune to be caught and 'made an example' by some 150 year old judge to whom all computer users are evil.***

...I applaud Emma Nicholson's every move. But I wonder if she is aware of the item shown on TV News a few weeks ago, where a hacker is parked in a van outside a Bank or other secret building and, with the aid of a TV set, 27MHz aerial (CB) and synchro box, is able to visually display on a TV set exactly what is on screen at the buildings premises. No number crunching or password finding needed: all the information is displayed for them courtesy of the building being scanned.

The mind boggles at the very idea of the information that could be gleaned in this way, and I would think it to be virtually undetectable in the 'hacking' sense of the word.
C C Whitley-Jennings, Milton Keynes, Bucks

● ***This sort of hacking has been around for a few years and it seems to be covered by section 1.3 of the Act ('A person who... receives... by means of electromagnetic waves... any writing, signals, signs, pictures or sound... shall be guilty of an offence'). It is also rather easier hacking to spot than the armchair and modem variety – if a large black van with all the windows blanked out parks in front of your offices for an hour you can be sure it'll be noticed. Personally I don't think it poses as great a threat as the more usual type.***

Story time

Once upon a time there was an advertisement for a Spelling Checker and Thesaurus from Database Software. A foolish young man ordered the software from the advert.

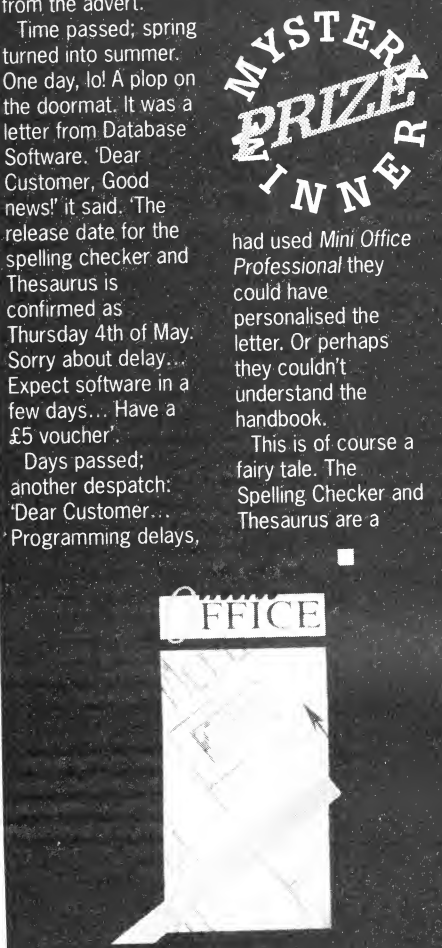
Time passed; spring turned into summer. One day, lo! A plop on the doormat. It was a letter from Database Software. 'Dear Customer, Good news!' it said. 'The release date for the spelling checker and Thesaurus is confirmed as Thursday 4th of May. Sorry about delay... Expect software in a few days... Have a £5 voucher'.

Days passed; another despatch: 'Dear Customer... Programming delays, but programming now finished... Expect delivery well within next 21 days: Have a PCW disk'.

The foolish young man thought to himself, if Database had used *Mini Office Professional* they could have personalised the letter. Or perhaps they couldn't understand the handbook.

This is of course a fairy tale. The Spelling Checker and Thesaurus are a figment of the imagination and I am not a young man.

The retail value of the freebies: £8. Retail cost of software: £24.95, so there's no rush lads, just keep sending the freebies. At this rate the software could end up being free.
B Smith, Plymouth, Devon



• Mini Office Professional, available – er – in three weeks (this is an Artist's impression)

● ***Perhaps the PCW software we're sending you as the sender of this week's prize letter will help too. Poor old Database has had a lot of trouble with Mini Office Professional. Wonder what they'd have done if they'd been sub-contracted by God during the Creation?***

'Dear Customer, We apologise for the delay in getting the Oceans out to you. These should be here by Wednesday week. We have now debugged Day and Night and these are being duplicated as we write this. We are currently producing the documentation to the beasts and fishes and fowl that may fly and those will be with you in 21 days. Meanwhile please accept the enclosed pound of Golden Delicious apples.'

biggest games freak, The greatest computer nut" and so on. After a very impressive start in the computer mag business and by breaking all the previously sacrosanct rules ie:
1 No computer magazine will succeed without 95% of its editorial being dedicated to games and games reviews.
2 No computer magazine can fail if every issue contains an article on the Mysteries of such things as The If statement: how it can change your life
3 No computer magazine can cost less than £1.50 (The public must not be lead to expect value for money, lest civilisation as we know it should collapse).

You appear to be being tempted by the seedier side of life. Has your good start been all for nothing or can we now expect to see a 'That's computing' column edited by Esther Ramdisk, containing such treasures as Ringo the wonder budgie, the only known feathered assembly language programmer, who has just released a new full featured word processor called *WingStar*.

Maybe you will incorporate a pull out supplement called News of the Computer World with headlines like "Sexy Cindy reveals 'I had 20 Disk head crashes in one night". On page three a picture of a busty pair of disk drives in all their naked glory would almost certainly increase the pulse rate and you circulation.

I hope that my fears are groundless, but often in the past a magazine has started well only to end up on the scrap heap of mediocrity. In the past I have bought your publication and enjoyed most of its content, please don't give me reason to stop.
Ewan Russell, Bristol, Avon

● ***Don't worry. We plan to make Express even more highbrow. Some planned features:***
• Algorithms in Occam for processing orthogonal expansions in Hilbert Space with special reference to the Jordan Canonical Form, introduced by Samantha Fox;
• A comparative computer analysis of polytonality in the later string quartets of Beethoven and Shostakovich, with a free poster of Jason Donovan and Kylie Minogue;
• Aspects of post-modernist cubism in the surrealist works of neo-classical computer graphic artists, plus an interview with the Saint and Greavsie.

WE CAN WRITE TOO

Thank you for publishing my letter (*Express* 27). I take your point but I think you miss Mr Parker's suggestion and the gist of my letter. I seriously think that your readers would willingly submit articles about their experiences of computers without demanding money (well, that's my impression).

Like yourself, I'm also in favour of meritocracies (in this case your editorial team) but I also believe that humans can articulate themselves very well whether they have failed CSE English or are Professors of Literature (you'd probably get more sense out of the former). I assume people learn to use computers without the need for taking examinations or holding formal qualifications, like myself, can communicate and even read books and magazines!

I don't think you will have anything to lose by encouraging genuine and positive submissions for publication from "amateur" writers. We would all benefit, including our egos and your sales might go up.

I hope you can give us "amateur" writers a chance to prove you wrong (I wouldn't want to accuse you of professional snobbery).
A Davis, Reading, Berks

● ***I'm nothing if not open-minded. Readers, whether failed CSEers or Professors of Literature, are welcome to submit articles on the understanding that no fee will be payable if it gets published. (Please enclose a sae for reply). And if I publish any of it, my name'll be mud down at our NUJ chapel...***

PLAY THE GAME (BUT NOT ON A PC)

Over the past months I have noticed many magazines trying to persuade us about the games potential of the PC. *Express* however, being the most sensible, doesn't. I am totally opposed to pushing PCs into the entertainment area, but I do not mind the idea of there being games so that the businessperson can have some relaxation, but I loath the idea of pushing them for mainly home use (in this county anyway).

If you stuck Mac II graphics on a Spectrum, would you then go spouting about saying you have the most awesome micro yet? I think not. Tobin (*Letters, Express* 26) was mislead, as just because he has a PC with VGA graphics doesn't mean that it can produce a demo as good as the 16-bit home computers. Due to the inferiority of the 8086 series generally compared to the 68000 series, it would need a really fast 286 to equal an ST, and I doubt if a 386 would be good enough to equal the graphics hardware of an Amiga.

I don't want to see PCs pushed for entertainment, as they offer terrible value for money as far as entertainment is concerned. PCs can be as good at games as the 16 bitters, better even, but at what price? VGA graphics, a Roland MT-32 sound board (the one that Rob Hubbard likes) and a 386 (486 would be great though) processor would cost an enormous amount of money and is easily beyond the home buyers cash reserved in this country. This is evident in the fact that the Archimedes doesn't sell in the home even with all its power, it doesn't matter; if no one can afford it.

The only affordable PCs are pathetic. Just imagine if STs and Amigas vanished, and people were trapped into getting PCs instead; you'd have to buy PC 200s (the PC with a similar price to the 16 bits). Four colour games and sound limited to beeps is worse than the 8 bit home computers. I'd stick to the C64 I used to have. The fact is that the Amiga & ST are newer, more powerful designs than PCs and given the software, would outperform them in the business area as well.

I am sure that offended some people, but they will be the ones that can't face the fact that the "toy" computers are better than the "real thing".
Richard Dunn, Hedon, East Yorkshire

● ***Interesting that everything now is being touted as the ultimate games machine from an ST to an Amiga to and Archie to a PC with VGA, and yet the vast majority of games being sold (85%) is still for those state-of-the-art beauties, the Spectrum, CPC and C64... (source: Computer Trade Weekly, May 1 1989).***

VIRUS KILLERS

I needs must reply to your comments on my letter in issue 27. You seem to be under a few misapprehensions. A boot block virus killer on a commercial disc (or disk if you really prefer) would not be a good place for a hacker to put a virus unless he was able to break into the factory and access the disks! Copying disks has nothing to do with the case.

Atari 8-bit column at last!

Fifteen requests for an Atari 8-bit column, I said, and we'll get you one. These are just the first few of the people who wrote in response in the first...

Dave Richardson, Aldridge, Walsall; Bob Plummer, Brentwood, Essex; Paul Mallabar, Gateshead, Tyne & Wear; L Wright, Cirencester, Gloucestershire; Darren John Dean, Worksop, Notts; P Masters, Poole, Dorset; R Drewery, Peterborough, Cambs; Pete Watson, Fareham, Hants; C A Preece, St Helens, Merseyside; Mr T Wilson, Manchester, Greater Manchester; Mr A Lakeman, Lindford, Hants; D Endersby, Chertsey, Surrey; Keith Townsley, Burton-on-Trent, Staffs; Derek Garforth, Great Yarmouth, Norfolk; B F Andrew, Nottingham, Notts; S J Goss, Reading, Berks; Norm Tierney, London; Ian Farley, Bourne, Lincolnshire; R DuCros, Walton-on-Thames, Surrey; Mr S Pheasey, Manchester, Greater Manchester; A P Mills, Stockbridge, Hants; Mrs Lynda A Craney, Southend-on-Sea, Essex; Robert Kent, Halifax, West Yorkshire; Simon Bodger, Chichester, West Sussex...

I know when I'm beaten. Clearly there aren't just one or two Atari 8-bit owners out there – there are dozens. Your column starts next

After all, if you could only get a virus from copying disks, there wouldn't be any problem, would there?

Let me tell you what happens. A machine is infected from some source (say a bulletin board or a PD disk). A commercial disk is loaded into the machine (without the machine being switched off first – bad practice, but we all do it some time). The virus now contaminates the commercial disk as soon as it has been inserted. If the contaminated disk is booted from at some future date, it infects the machine and spreads onto other disks and so on. However, if the commercial disk is one which reads something from the boot block in connection with its protection routine, once it is infected, it will no longer run and is in effect ruined. This happened to one of my disks.

The beauty of a protected boot block is that when you insert a protected disk into an infected machine, it detects the virus and sounds a warning, and thus will not be affected. This is what I was suggesting should be done as standard. It can be transparent to the user, so PR will hardly be affected. Besides, since I see some packages now bear stickers saying "virus free", I doubt if your objection holds. (Perhaps Heinz should put "glass free" stickers on their baby food tins?) I put such protection on my non-commercial disks, but obviously I can't tamper with commercial ones.
Roger Musson, Edinburgh, Scotland

● ***Well, OK, you could have a virus killer in the boot block, and it would work, but what's in it for the company publishing the software? Surely people can buy their own virus killers and just use them before they insert their games disks? If you don't want the game to be infected, why not just write-protect it, etc.?***

SINKING FAST

After many visits to my local computer shop I often came in to see that the staff were copying software. At first it seemed as if it was public domain, but eventually I realised that it was pirated games that had been 'cracked' or that had been copied straight off the shelf.

I then later realised that some kids often visited the store to buy this pirated software at a discounted price (i.e. £5), and would leave the staff with a personal profit. My friends and I were disgusted with the matter and immediately ceased visiting the shop as we were to be offered this pirated software. Therefore we decided to phone FAST. I think I personally talked to a Mr Bob Hay who actually said "We've had a lot of kids phone us up who give the same story just because they can't change their games, or get a refund."

Well Mr Hay you're meant to be cracking down on piracy and not letting it slip through your fingers. If the playground pirates aren't stopped how on earth are you to stop any pro criminals? Considering all those facts in mind Mr Hay, there is no excuse at all to say "We get hundreds of phone calls everyday". Perhaps are you considering a job with FISP (Federation Ignoring Software Piracy).
Harry, Slough

● ***It's unfortunately very difficult for anyone to proceed on the basis of a phone call, however genuine it is. If you can put your observations down in writing and send them to us or to FAST it would be a more solid basis to proceed on.***

XE LENT

Thanks for the XE that I won in your Christmas competition, it's great, but I can't find any software for it. I've tried Atari, but they won't listen, or reply! Could you please help, or I will have to sell it.

Your magazine is great, and I like the articles that you do on viruses, MIDI, etc. they are very informative. I enjoy reaching the Great Computer Debate.
Vijay Mahrra, Wolverhampton, West Midlands

● ***Well, Vijay, I think the best thing to do is to read our Atari 8-bit column starting next week. It'll be full of news, views and software reviews, and will tell you where to get the best and cheapest 8-bit software.***

Snippets

WELL DONE SIMON

I buy and read *Express* every week and I have found two of Simon Williams' little programs you've published in "PC Update" absolutely invaluable in my work, namely WARMBOOT and REPLY.

Thanks very much, Simon.
Alan Fraser, Macclesfield, Cheshire

● ***Simon, incidentally, used to write under the pseudonym Bertram Carrot.***

AMAZING RESEMBLANCE

While in the local video shop, I noticed a new film called Nico which has a man's face on the cover, who has a striking resemblance to the man's face on the cover of *International Karate Plus* for the Atari ST. Same artist, or some sort of tie in or just a coincidence?
Gary Campbell, Roxburghshire, Scotland

● ***I think artists are just running out of inspiration.***

ARCHIE BACK

On the ST/Amiga debate...

The Archimedes is obviously better than these two, and a £500 version would prove to be even better value than the Amiga or ST put together...
W W Haddock, Birmingham, West Midlands

● ***Yes, and I can't help thinking that at £650 the A3000 is a missed opportunity.***

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CPC D	ROBOCOP	STAR WARS	29 90	14 46
CPC D	TETRIS	VIXEN	27 98	9 48
CPC T	FERNANDEZ MUST DIE	ARMAGEDDON MAN	18 98	5 98
CPC T	ROBOCOP	STAR WARS	19 90	10 46
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POWER

- AT WHAT PRICE?

ARCHIMEDES A3000

HARDWARE REVIEW

Is this the entry-level Archie that everyone's been waiting for? Jerry Glenwright puts the Archimedes A3000 through its paces...

ACORN ARCHIMEDES £650 (+£300 for monitor)
● ACORN COMPUTERS, FULBOURN ROAD, CHERRY HINTON, CAMBRIDGE CB1 4JN. TEL. 0223 245200

Acorn always aimed its micros upmarket. The BBC, with its excellent BASIC and keyboard, user ports and add-ons was – in terms of specification – one of the leading 8-bit micros of the day. It sold well in the educational market, moderately well in the home market and still holds its price and has a loyal following amongst home users. The one criticism of the machine was its price – all the Acorn machines from the Atom onwards had large price tags attached.

After floundering in the mid '80s and being bought by Italian computer giant Olivetti, the general consensus was that the company would gradually fade into obscurity. But, in 1987, Acorn bounced back with a vengeance when it launched the Archimedes computer, an up-to-the-minute, 32-bit machine with raw computing power superior to anything available in its price range.

At the heart of this new machine was a central processing chip employing RISC technology – the acronym for Reduced Instruction Set Computer. This technology uses a reduced instruction set to control the central processor. Rather than using lots of separate instructions to perform each action, a few general commands are used over and over again, and this significantly speeds up operations.

The Archimedes received much critical acclaim, but remained obscure outside media write-ups due to its inflated price of over £800.

Who was going to buy it? With the exception of a few educational establishments, the computer remained on dealers' shelves.

Software writers and the general public, although interested, kept the coffers closed and awaited an Archie they could afford.

At last, around the end of March this year, the press broke the news of a new, affordable Archie to be released in the summer. Costing between an estimated £500 and £600, it would be aimed directly at the existing BBC micro user market, hopefully increasing Acorn's sales and profit margins.

Features

The Archimedes A3000 is visibly different from its Archie predecessors. Out goes the three-box monitor, system case, keyboard layout, and in comes a machine about the size of a Commodore Amiga with almost the same layout.

The A3000 adopts the standard ST/ Amiga arrangement of a keyboard with a cursor cluster and numeric key pad to the right, and a built-in disk drive at the right hand side, which accepts the now universal 3.5 inch disk format. Above the keyboard is a row of red function keys à la BBC.

The rear of the Archie has various interfaces including monitor and serial port sockets, stereo amplifier/headphones outlet and a parallel printer port. The final connection is for an Econet (Econet is a local area network for BBC micros) network – if you've installed the necessary hardware. The mouse port is on the underside of the machine.

All ports are as standard and will work with your existing peripherals such as monitor, modem and printer (although the serial port requires the purchase of a further two chips to fit into the motherboard before it will work properly).

The A3000 employs the 32-bit RISC CPU of its predecessors offering a computing rate of 4 MIPS – that's four million instructions per second. With the available power, multi-tasking is no problem and fingers crossed, software houses will take up the challenge and produce applications that actually make use of all this power.

Two speakers built into the machine provide an outlet for eight channel stereo sound.

The machine has a megabyte of RAM as standard and can be upgraded to a maximum 2Mb in the case. Although that sounds sufficient for all possible applications, some of the graphics modes take up several hundred Kbytes, so a minimum 1Mb is necessary.

User interface

Switching the machine on, you're presented with a full WIMP environment desktop with icons for various tasks such as font setting, printer definition, desktop colours and an interactive help feature which allows you to extricate yourself from tricky situations without rummaging through manuals.

The desktop is colourful and the icons are well designed and drawn. The Archie offers screen resolutions ranging from a text-only mode of 160 x 256 pixels, to an extremely high resolution graphics mode offering a massive 1152 x 896 pixels!

All operations are achieved by moving the mouse pointer and clicking on the desired 'command' and the machine does the rest.

Documentation

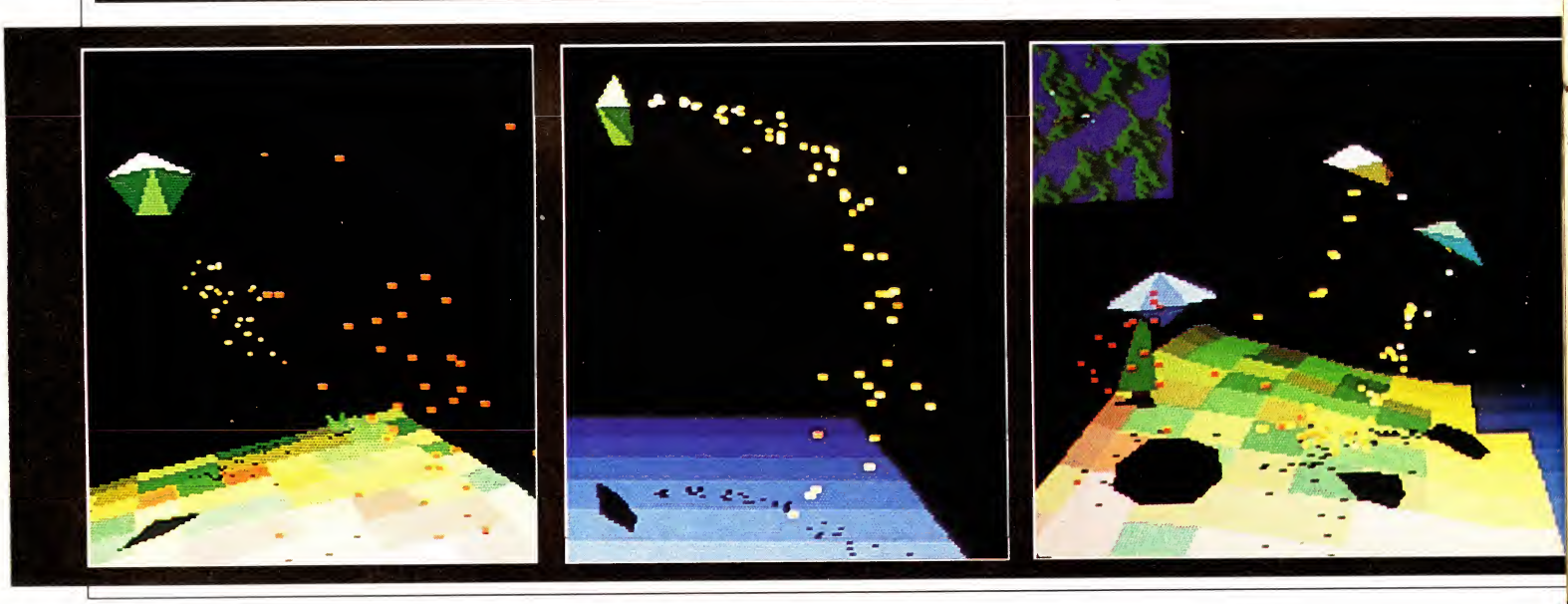
Several hefty manuals are provided covering all aspects of the operation and programming (in BASIC) of the Archimedes.

There's a 'Welcome to Archie' guide which helps you get the machine from its packaging and introduces you to some of the features.

Sections dealing with set-up, using icons, fitting the mouse and what to do if it all goes wrong, help you to get started right away. At the back is a useful appendix showing the user ports and their pin-outs.

RISCy Business...

● In the time it took you to read this review the A3000 could have plotted the complete Mandlebrot fractal equation. It would take the BBC micro six days of uninterrupted processing to plot the same equation!
● Think the Amiga has great sound? The Archie has eight channels with stereo reproduction available on every one – pump up the volume...
● Back in 1974 when the first central processor became available it could shift around four bits of data flat out. The Archie uses a 32-bit processor offering raw processing power 8 times that of the original devices. It's like the difference between a Fiat 500 and a Porsche.
● Everyone's aware of the fantastic graphics capabilities of 16-bit machines such as the Amiga, ST and PCs running in VGA mode. The Archie has 20 different graphic modes ranging from basic text-only displays, to mega hi-res displays providing 1152 x 896 pixels on screen at once!
● Games? Whilst the ST is struggling to animate one Seeder, your hoverplane and the landscape in *Virus*, in the Archie version, you'd be attacked by a mutant and two pests whilst trying to shoot down a seeder – all above a colourful landscape scrolling incredible fast and smoothly beneath you.



The inch-thick user guide deals with all the topics mentioned above in greater detail and lots more. And there's a hefty tome detailing the use of *BBC BASIC*, with all the more arcane commands explained in full detail and examples of how to use them.

All the manuals are written in a clear and accessible style which is at once informative and entertaining. The latter two volumes are ring bound, making it very easy to use them whilst at the machine.

Verdict

A fine machine. It's fast and powerful and the use of leading-edge technology in a machine aimed at the home and educational market can only be commended. With its excellent graphics and sound, double-sided disk drive and megabyte of memory it has to be the first choice for the user looking for power computing.

OK, but just what is power computing? IBM and its many compatibles has the business market covered, the Amiga is the first choice for graphics and the ST is an excellent general purpose 16-bit machine for home or small business use. All these machines are significantly cheaper than the Archie.

Unfortunately, the machine is just too expensive for its intended market. Acorn regrets the pricing of the Archimedes, but says that it is at the lowest possible level. If you consider current DRAM costs and contrast the Archie with another megabyte machine such as the Atari 1040ST then it comes up looking a little better, but at £659 for the computer without a monitor, it's going to have more would-be users with their faces pressed against dealer's shop windows than actual owners. The result is a potential five-star machine, just edged out by its price.

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TECH SPEC

How does the Archie measure up? Touted as the most powerful micro available for the person in the street, just what does Acorn's new baby have on offer?

- **CPU: 32-bit RISC chip, offering processing power rated at 4 MIPS.**
- **RAM: One megabyte of fast CMOS RAM on board, up-gradable by a further one meg inside the case.**
- **Display: Various graphic display modes ranging from a text-only display of 160 x 256 pixels to a hi-res graphic mode of 1152 x 896.**
- **Disk Drives: One built in 1-megabyte 3.5 inch drive.**
- **Operating System: RISC-based, multi-tasking operating system featuring a WIMP environment.**

Worth the Risc?

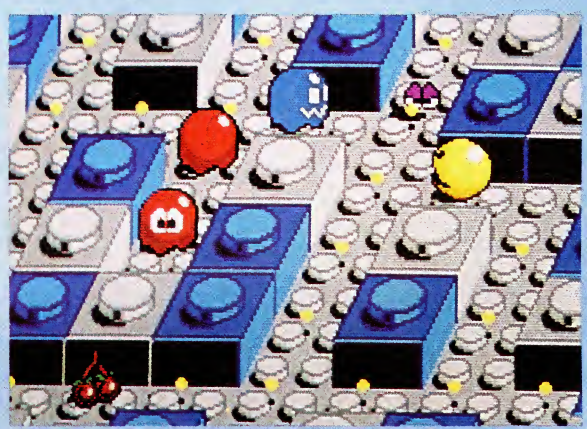
With the Archie's impressive raw processing power and high grade audio-visual quality, it could be THE micro for playing games, right? You couldn't be more wrong, Rik Haynes explains why...

Most micro users are a tad envious of the Archimedes' impressive array of specifications, from the 32-bit ARM microprocessor – through the 256 colour display – to the eight stereo sound channels, which gives even the mighty Amiga a run for its money. Unfortunately, this power comes at a price too prohibitive for the average home user, let alone the hardened games fan.

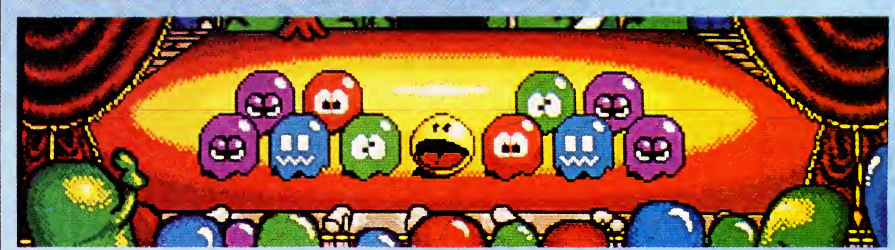
This coupled with a lack of competent ARM programmers, makes the Archie a less than inspiring micro choice for the average software company.

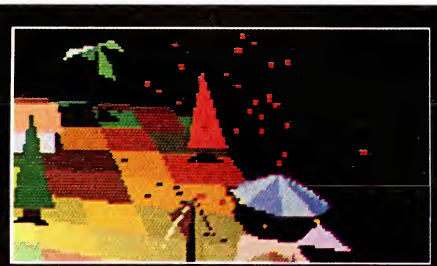
Still there have been notable exceptions to prove this rule, namely David Braben's superlative Zarch, which probably did more to sell the Archie to the general public than all its specifications put together. There was even a rumour, no doubt originated from Acorn's PR department, that Zarch was written using BASIC!

The only hope for Archie gamesters is that other software companies take all the associated problems in their stride and follow the lead taken by Superior Software (Zarch, Conqueror) and Grandslam (Pacmania)... three games which have shown just what the Archie is capable of...



• The advanced features of the Archie meets classic gameplay with Grandslam's Pacmania – proving the Archie has a place in mainstream computer gaming





• When first released, *Zarch* for the Archimedes prompted several sources to suggest that you should buy the machine just to play the game. Maybe that's overstating it, but it sure is a good game and although converted to many formats, the Archie version is still the fastest, most colourful and best.

The Archimedes boasts twenty graphic modes with a maximum display resolution of 1152 x 896. If software houses decide to make use of the Archie's abilities, you can expect to see some incredible applications. With one megabyte of RAM as standard and eight stereo sound channels, the Archie is the ultimate games machine.

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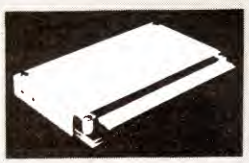
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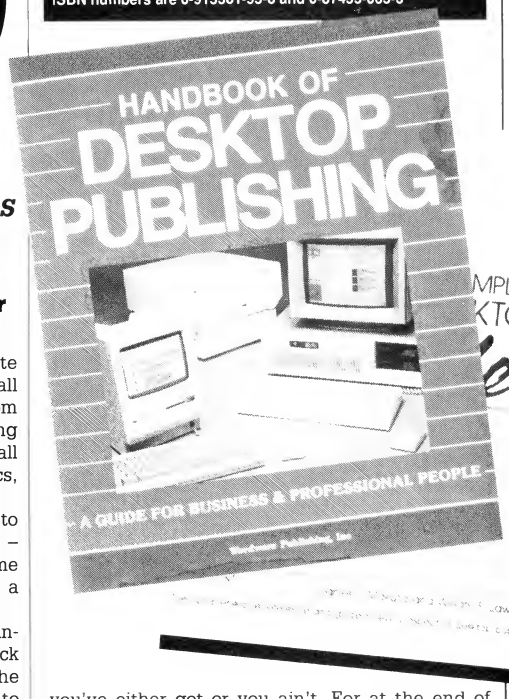
VISA

Worth the lay-out?

Andy Storer leafs through two books on the mysterious world of DTP

Copies of these books can be obtained from Computer Bookshops, tel: 021 706 1250 – or from 'any good bookshop'. ISBN numbers are 0-915381-95-8 and 0-87455-065-3



Handbook of Desk Top Publishing ● Wordware ● £18.45

As you might expect, the 170 pages of this handbook are well laid out – providing a clear insight into all the aspects of desk top publishing.

Although – as with many other books on the subject – the emphasis is placed on PC and Mac DTP, the general material can be applied to any micro DTP package that supports some or all of the features covered.

Illustrated throughout with practical examples, the handbook begins with a survey of associated hardware – monitors, mice, scanners, printers etc. There's also a section on networking.

After looking at word and graphics processing tools, the book moves into full swing with 32 paragraphs on the main features of page layout. While these are a little short, they assume no previous knowledge of the subject and can only therefore be treated as an introduction to DTP. But *Handbook of Desktop Publishing* is a clear and easy read and will familiarise you sufficiently with the factors you'd need to determine in deciding what kind of package to purchase.

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The Complete Desktop Publisher ● Compute! ● £19.95

At a meaty 294 pages, complete is an appropriate adjective for a substantial work dealing with all aspects of DTP and beyond. It'll take you from DTP techniques through typography to dealing with printers, design studios and binding. And all this after an intensive journey through graphics, scanning and copy preparation.

But that isn't all. From then it's on to telecommunications and media conversions – obviously this book is intended for the first time user who's planning to be involved in DTP in a big way.

As such, the work fairly rattles along with in-depth descriptions and illustrations coming thick and fast page after page. Value for money is the name of the game here because attention to detail is substantial. Again the manual is biased toward PC and Mac DTP but manages to move away from package-specific analysis. And for that matter, DTP packages themselves – for instance there's a chapter devoted to the design and layout of databases. The chapter on layout and page design is especially useful, since artistic style is an imponderable many people would say you've either got or you ain't. For at the end of the day anyone can lay out a page – DTP packages are usually simple to drive and well documented with massive manuals – but whether it'll look any good is down to a good knowledge of design principles. *Complete Desktop Publisher* will furnish you with these and more.

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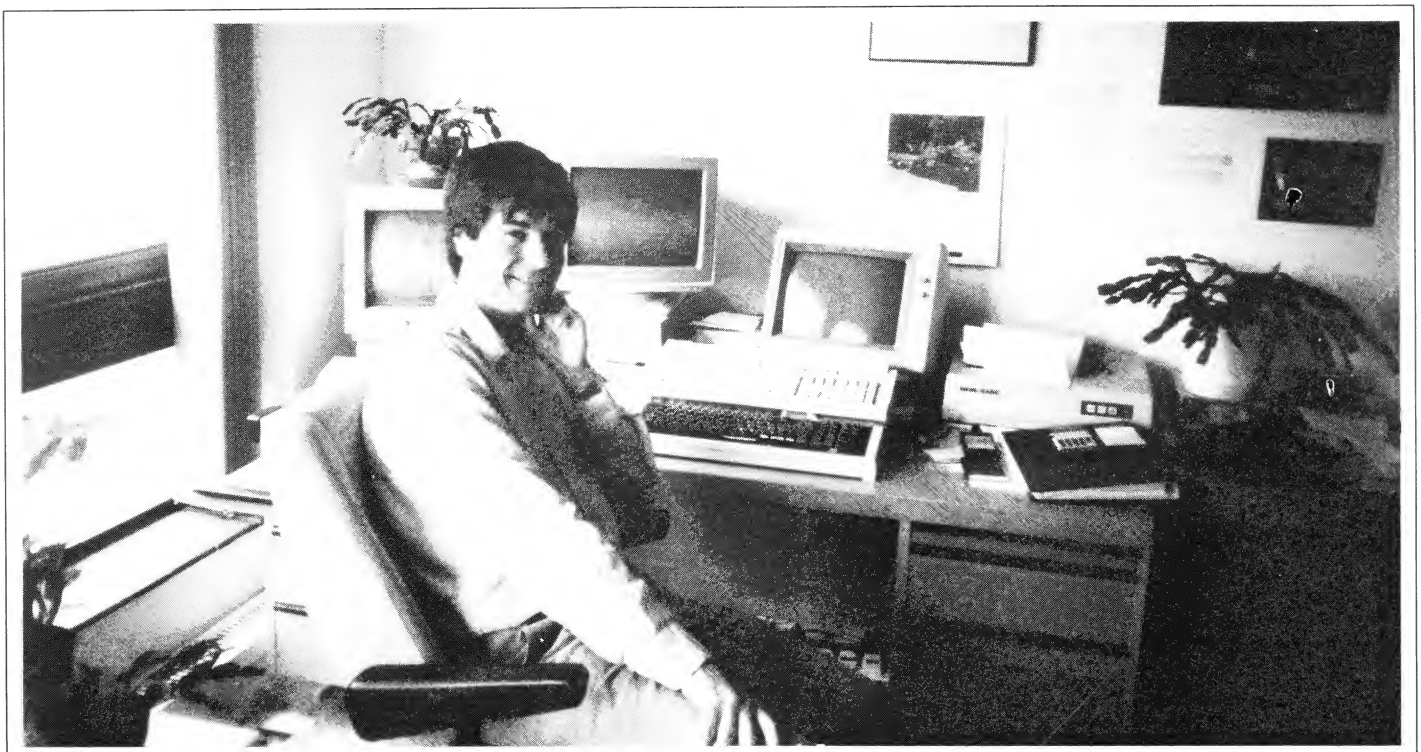


• David Braben: Coming next - Elite 2

BRABEN'S BABIES

David Braben is responsible for two of computer gaming's best titles – Elite and Virus. They alone have earned him some £300,000 over the past few years. Colin Campbell visits Cambridge and asks how he did it...

Elite and *Virus* are two of the nicest games in the biz.

They've kept hard bitten and fussy gamesters slobbering over their micros for an eternity in man hours. They've made even the most basic computers look very impressive. And they've made David Braben a lot of money.

This methodical 25 year old has spent the past six years submerged in crafting computer games. His fastidiousness is renowned. It's not a disaster that he decided to start all over again on *Elite 2* after four years work. He just didn't think the original ideas were very good any more.

Both *Elite* and *Virus* are two of those games which people actually argue about in pubs. The former has sold something like 600,000 copies around the world. At one point Braben was waking up to find cheques of thousands of pounds waiting on the doormat.

Somewhat shyly, he mumbles that he is worth £300,000. Infuriatingly he is not prepared to boast about all that lovely lolly. "It's a ridiculous thing to judge people by how much they earn. People get stitched up on contracts so often that it can't be a test of quality."

Elite was written by Braben and his Cambridge University pal Ian Bell some six years ago for the Beeb. At the time space trading shoot-'em-ups were a new idea.

What made you do it?

"I had an abortive attempt at doing a 3D space shoot 'em up whilst at University. To add trading to that seemed like an enormous job to be done at the time. Everything just grew from there."

"The trading aspect of it was almost a justification for the fighting. It was something to do in between combat."

When it hit the streets *Elite* was a smash hit. People are still crouched over their micros attempting to become one of the Elite.

"To be honest the rating of *Elite* was a joke. We thought it would simply take too long to get there. It was just something to aspire to."

"It's terribly hard to put a lot of new things in a game which will keep people interested for years and years. So we put the Elite rating really high. We knew people would try and get it and that they'd spend a lot of time trying. But we didn't expect anyone to do it. Now there are loads of them."

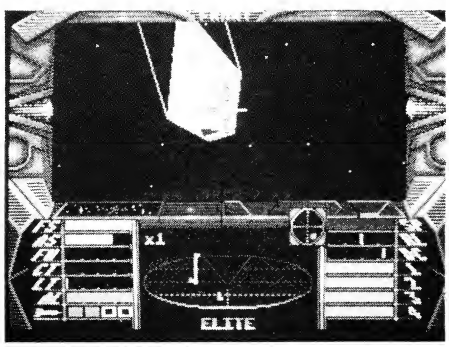
"It took two years to write and we genuinely thought someone would beat us to it. We were surprised that nobody did."

Were you pleased with it?

"There were some aspects which were a bit boring but it sold out within a week of launch. We were delighted."

Over the past year *Elite* has made its way on to the 16-bit formats. Some expressed disappointment that it didn't offer more than the game which first appeared all those years ago. What do you think?

"I didn't do the conversions. Mr Micro did them. I felt there were a lot of disappointing aspects. A little bit more effort could have gone into it. I felt they rushed it out which was unfortunate."



• Hundreds of thousands joined the Elite: "Some boring aspects" but still a winner

How much autonomy did you have?

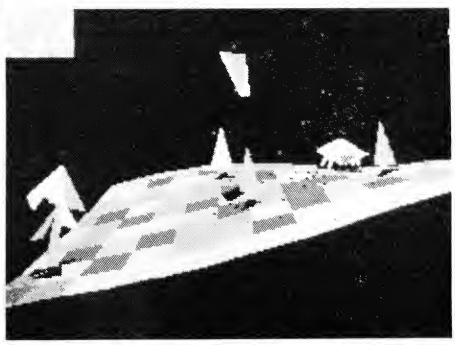
"A little bit, but not as much as I would have wanted."

Alright then. What about *Elite 2*?

"That's taking all of my time now. I work about four or five hours a day but I can't do stretches longer than that. You just can't do any more than that. I couldn't work through the night like some people. I'd end up going mad."

The danger with *Elite 2* is that if I start talking about it now certain aspects will turn up elsewhere. That would really take the polish off. I haven't found anything from *Elite 2* in any other games yet."

"I'll show it when there's enough to see to get excited about. At the moment it's all bits and



• The Virus which everybody wants: Some trouble with the 16-bit conversions

bobs. But the ideas are there. I'm aiming for September 1990."

What are these ideas?
"It's a lot more than a space trading game but it is a sequel, a direct follow on from the original *Elite*. It won't be called *Elite 2*. That's only a working title."

Can we expect to see any other versions of *Zarch/ Virus*?
"There was a Speccy version but I'm not sure if it will come out on any other formats. That was mainly down to a guy called Stephen Dunn who wrote a letter saying 'can I convert it'. He did a good job considering he had had his work cut out for him. The Spectrum isn't the perfect machine to program for.

I don't think it's the sort of game which converts very well but if someone offered to do a 64 version I'd look at it."

When *Zarch* appeared on the Archie it impressed a lot of people. Did you have many problems writing it?
It only took a few months on the Archimedes but the real problems were on the ST and Amiga. It was hard to get the speed right. With the Archie version I had to have it ready for the launch of the machine so the time was already dictated. It takes a really long time polishing things up."

Would you ever consider working nine to five for a software house?
"No. I like to do what I want when I want. There's nothing wrong with working for a single software house. I've done it for short periods and there's always a nice social atmosphere. But I wouldn't want to be a regular nine to fiver."

What do you do when you're not programming?
"I like to go sailing and I play a lot of ball games. I also play some games like *Populous* but you can't do too much of that. It's worth keeping an eye on what's going on."

Why Populous?
"It's got new ideas in it. It is doing well because it's different. There are only so many ways you can do a sideways scrolling shoot-'em-up. Somebody comes up with a good idea and everybody puts all their efforts into doing the same thing. If flight simulations like *Interceptor* are doing well there's another ten before you know it. There are far too many games and not enough variety in this country."

Given that so many people have bought your work don't you sometimes feel you could have been really wealthy?
"Perhaps. It's hard to say. Certainly there's a lot of piracy going around. Nowadays it's mainly commercial outfits. They are crucifying software. The trouble is people want good stuff and it's good stuff which suffers the most."

What about writing games. Are the days of computer junkies hunched over in back rooms over?
"That still goes on. Programmers are prone to greed and exploitation. They work hard and they don't get paid very much. It happens less so now. It used to be a cottage industry with kids coming home from school and writing games. People thought they didn't need to be paid much because they don't have to support themselves. That is less so now.

OK. So what happens after *Elite 2* or whatever it's going to be called?
"I've got something lined up which will involve a lot of people. But that is a really long term project. It's very sketchy."

Are you going to stick around writing games?
I'll be here for a few years yet although there are things I'd like to move on to."

After I'd toddled off, no doubt Braben switched his electronic armoury back on and dived into his secret project. It's a long way from completion. But the cheque might as well be on the way. ●

Braben's beef

One thing seems to wind him up something chronic – *Federation of Free Traders*. The Gremlin space trading game appeared earlier this year and was met with "a mixed reception" from punters and reviewers alike.

"It shows a certain lack of imagination. There are no new ideas and I think that's sad. There's no reason for someone to put so much effort into a game which aims straight at *Elite*. It doesn't try and do anything different.

"Jez San's *Starglider 2* is a space trader game but it's got a different slant on it. There was an opportunity to do that with *FOFT* but it's just *Elite* with a few extra bits.

It's not very polished and a lot of people have said it's flawed. People don't want umpteen versions of the same game."

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G

GALLIUM ARSENIDE (T): Crystalline substance used to make very high quality semiconductors. Although superior to silicon, its use is limited due to its high cost.

GARBAGE (T): Used to describe junk text emanating from an application running on a computer. Gave rise to the acronym GIGO – Garbage In Garbage Out.

GATEWAY (T): One node or terminal on a computer network which allows access to an entirely separate network. Users log on to the network, access the gateway node connected to a second network and thereby gain entry to the second network.

GAUNTLET (G): Cult coin-op allowing one to four players the chance to adventure simultaneously in an eight-way scrolling maze-infested arcade adventure.

GEM (OS): Operating system designed and marketed for 16-bit computers by Digital Research, the company responsible for the CP/M operating system. GEM is an acronym for Graphics Environment Manager.

Programs and files are represented on screen as pictures or 'icons'. The user has a device known as a 'mouse' at their disposal (a plastic box which fits the hand, it contains a wheel which is moved around on a desk top) and by moving the mouse a pointer on screen it can be used to select the icon representing the operation the user wishes to perform.

GEM effectively negates the need for users to remember obscure command sequences. See also ***Kildall***, ***CP/M***, ***WIMP***.

• The Atari ST uses Digital Research's GEM operating system – designed especially for 16-bit machines

GERMANIUM (T): A crystalline semiconductor material which is the second most popular material for use in the construction of semiconductor circuits (silicon being the first).

GFA (CO.): West German language products company, offering replacement BASIC for the Atari ST and Commodore Amiga.

GHOSTBUSTERS (G): Until *Out Run*, this game was the biggest selling game of all time. Programmed by Activision, it's one of the best examples of film tie-in software. The game is now available in a £1.99 budget version.

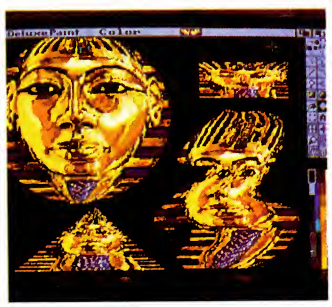
GHOSTS 'N' GOBLINS (G): Classic CapCom coin-op conversion featuring the player as a knight in shining armour in a horizontal scrolling game that has Venus Flytraps and graveyard-walking zombies.

GIGABYTE (T): One billion bytes, one million Kbytes or one thousand megabytes – the amount of space on a disk sufficient to store 120 Bibles. The gigabyte is usually used in the descriptions of devices such as CD-ROM storage devices.

GLOBAL VARIABLE (L): When using high level languages such as Pascal and Modula, the global variable is one whose value is valid across the whole program rather than within specific routines. Contrast with ***local variable***.

GOLDRUNNER (G): Steve Bak shot to fame with this vertically scrolling shoot-'em-up featuring the fastest scrolling techniques ever seen on the Atari ST. Unfortunately, the game has minimal depth of play.

GRAPHICS (GR.): Generic word used to describe the pictures displayed on computer screens – anything from simple mono bar graphs and pie charts to fully animated colour screens in arcade games or advanced flight simulators.



• Graphics: pictorial as opposed to textual computer display

GREMLIN (CO.): Label under the US Gold umbrella, set up in the early '80s by Ian Stewart. The company is responsible for the game *FOFT* which received mixed reviews when released. See also ***FOFT***.

GUNSHIP (G): The definitive helicopter simulation from Microprose. The game received rave reviews for its superb graphics and depth of gameplay. Available for a range machines including Spectrum, Commodore 64, Amstrad CPC and the Atari ST, with an Amiga version promised this year.

• Gunship: classic gung-ho helicopter sim from Microprose

H

• Hacker: individual who illegally breaks into computer networks and data banks

HACKER (P): Generic word originally used to describe people who spent a lot of time working and playing with computers.

Nowadays, the word is applied to computer users who gain illegal access via a modem attached to their computer and the telephone lines to the computer data of various organisations.

HACKING (T): Computer 'breaking and entering' – the illegal entry into someone else's computer system. Usually this is done from the hacker's home by dialling up the target computer over the phone lines using a modem (although the simple act of using someone else's computer with intent to look through their files would also count). The target could be an individual, a business, a financial institution, Government or military establishments – anything that uses a computer.

Once contact is made a password or series of passwords must be ➤

Part 6 of the definitive Express guide to computing

entered to proceed further; there are special programs which will repeatedly try different passwords for the hacker, either from a preselected list or even from a dictionary.

If the passwords can be guessed (and this is notoriously easy) the hacker can then roam around the data banks viewing, altering or deleting information – military secrets, salary lists, personal employee records, credit histories, names and addresses, anything that is stored there. The consequences of this can clearly be disastrous and cases of hackers spying have already been uncovered.

Catching hackers, or even knowing they have been at work, can be difficult as they leave no physical traces or clues. Hackers who don't actually destroy data do not break the law as it stands currently, but a new Private Members Bill introduced into the Commons by Tory MP Emma Nicholson aims to make hacking an offence punishable by up to ten years in jail.

HAL (C): Featured in the movie *2001 – A Space Odyssey*, HAL was the honey-tongued monster in silicon which ruined the space mission, killing some of the characters. It spawned a plethora of computer killers.

HALF DUPLEX (T): Computer communications in which each computer can either transmit or receive, but not both at the same time as in full duplex. Contrast with ***full duplex***.

HAM MODE (GR.): High resolution graphics mode offered by the Commodore Amiga (acronym for 'Hold And Modify'). HAM graphics offer significantly superior displays over other home computers.

HAND HELD (C): Generic term describing very small computers which can be used whilst held in the hand and carried in the pocket. Some notable hand helds are the Psion Organiser, Sharp IQ7000 and Casio range.

• Sub-miniature micros like the Psion Organiser can be carried in the pocket

HANDLE (HACKING TERM): Pseudonym used by person interested in hacking computer installations and 'cracking' the copy protection on commercially produced games programs. See also ***hacker***.

HANDSHAKING (T): Method of communication in which the receiving machine transmits a signal in order that the transmitting computer machine knows that the file was correctly transmitted.

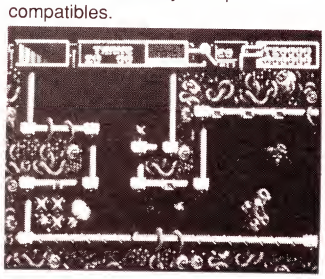
HARD COPY (T): Paper printouts of text or data held within a computer.

HARD DISK (T): Computer backing storage consisting of an inflexible disk of aluminium housed in an air-tight sealed case and connected to the computer via a high speed interface. The read/write head of the disk rides above the surface of the disk on a cushion of air a few microns thick.

The hard disk can store enormous amounts of data – from 5Mb when first generally available in the early and mid 70s to 300Mb in today's fast PCs.

HARDWARE (T): Computer machinery, specifically anything which has a physical presence and can be touched, picked up etc. (Occasionally defined as 'the parts of a computer you can kick'). Contrast with ***software***.

HEWLETT PACKARD (CO.): American computer manufacturer which produces a range of machines including moderately cheap PC compatibles.



• Hewson's Cybernoid II

HEWSON (CO.) Pitching themselves as the oldest software house, the company is responsible for such well-known titles as *Cybernoid* and its sequel *Cybernoid II*, *Eliminator* and *Exolon*. The company suffered a setback in 1987 when one of its top programmers – Andrew '*Gribbley's Day Out*' Brabrook – left to join Telecomsoft.

HEX (T): The hexadecimal number system – a number system with a radix of 16. Numbers after 9 are represented by letters i.e. 8, 9, a, b, c, d, e, f, 10, meaning nine, ten, eleven, twelve, thirteen, fourteen, fifteen and sixteen. 11 is 17, i.e. one sixteen and one unit: 17. See also ***binary***, ***octal***.

HIGH-LEVEL LANGUAGE (L): Computer language which has command statements similar to English, mathematical equations or anything readily understood by humans, used to write computer programs. (VAT=COST*0.15 and PRINT VAT might be instructions in a high level language; low-level equivalents would be several lines of numbers or meaningless letters). Pascal, Cobol and Fortran are all high-level languages. Contrast with ***low-level language***.

HINT SHEETS (GG): Also known as cheat sheets, these are clues provided by software houses for games players stuck on a particular arcade game level or adventure game problem.

HI-RES (GR.): HIgh RESolution, i.e. high quality graphical displays generated by a computer. To offer hi-res as a display mode, a computer has to be able to plot at least 640 x 400 points ('pixels') on the monitor. Computers such as the Commodore Amiga and Atari ST offer the ability to produce hi-res displays. See also ***pixel***.

• The 16-bit Atari ST and Commodore Amiga offer Hi-Res graphics modes

HISOFT (CO.): Software house based in Bedford which is responsible for a large range of computer language products such as compilers, interpreters and program editors available for almost all home and small business computers.

HOBBIT (G): The first of the interactive adventure games in which the player was able to 'speak' to the inhabitants of the adventure world, thereby altering their behaviour. The hobbit enjoyed a long run of popularity on almost all home computers and led to one or two computer journos forging lengthy careers answering hobbitish problems under guises such as 'your man with the golden lamp' etc.

HOLOGRAM (T): 3-D image produced by lasers. Though speculation suggests that this could lead to 3-D computer displays, the technology to enable it is many decades away.

HUNCHBACK (G): The first ever official coin-op conversion to home computer, which helped to put the software house Ocean firmly on the map. The game is one of a very few to be advertised on television.

HOME COMPUTERS (C): Generic term describing small, affordable computers intended for purchase and use by the ordinary person in the street. Prior to the advent of the home computer around 1978, computers were very expensive, restricted to businesses.and large academic institutions.

The first home computers came with tiny RAM memories, poor quality graphics and little or no sound such as the Sinclair ZX81, and yet sold millions, making the UK the first country in the world to have an active home computer industry.

Other notables from the early days are the Spectrum (still going strong),

• Sinclair Spectrum: one of the first of the home micros – and still going strong

Key: C - computer Co - company DB - database DTP - desktop publishing G - game GG - game genre Gr - graphics Int - integrated software L - languages P - personalities SS - spreadsheets T - tech spec WP - word processor

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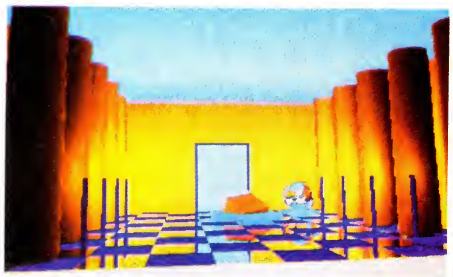
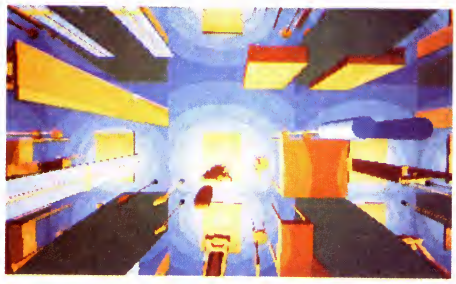




C-ing the light

***Already established as THE micro for graphics work, the Amiga has a constant stream of graphics packages released for it. Rik Haynes raytraces his steps through the latest offering,* C-Light.**

C-LIGHT (Ray-Tracing/Animation)
● AMIGA (1Mb of RAM recommended but not essential)
● £49.95 ● DEVELOPED BY PETERSEN ENTERPRISES, USA
● DISTRIBUTED IN UK BY ARTRONIC SYSTEMS ON 0423 525325

C-Light is a combined ray-tracing animation package allowing the user to draw and animate both simple and complex 3D objects, while still being aimed at the novice to intermediate user.

Features

Coming on two disks, *C-Light* is split between *C-LightI* Scene Editor (for creating the scene's objects), *C-LightII* Ray Tracer (that calculates and draws the scenes described by *C-LightI*), and *MakeAnim* and *PlayAnim* programs (for creating and viewing animations of the scenes you have produced).

C-Light incorporates most of the standard Ray Tracing facilities, and it supports both interlaced and overscanned Amiga graphics modes, but its multitasking could do with a tweak in the speed stakes.

User interface

Once you've setup *C-Light* to your system's requirements, you shouldn't have too much difficulty in using it. Every function is self-explanatory and easily accessible. The only major problem we encountered was its marked lack of speed with both the *C-LightI* and *C-LightII* program modules.

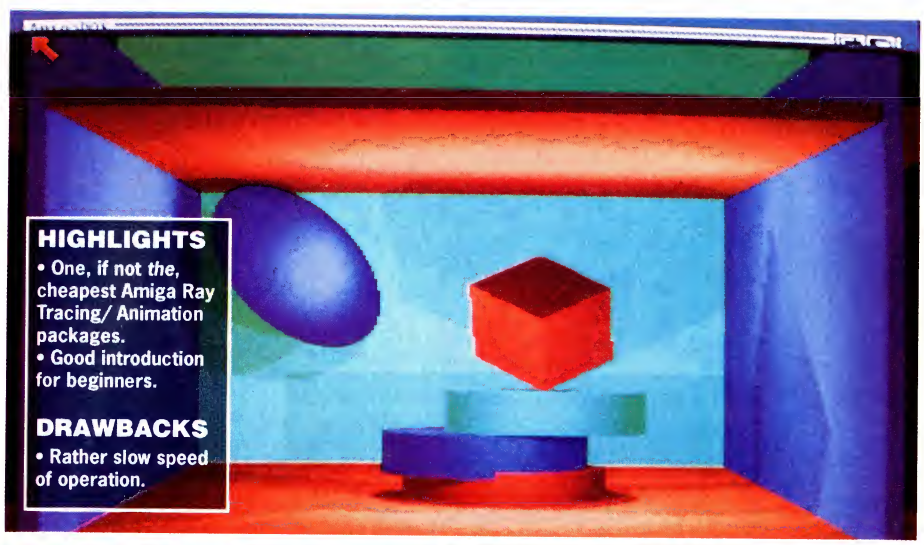
Documentation

The 50-page manual is an easy-to-read tutorial on the functions and procedures of *C-Light*, which shows you through the package in step by step manner. It also includes many pieces of useful information, such as hints and tips and a selection of recommended books to read. The only thing it lacks is an index, but with its small size this is not too serious an omission.

Verdict

C-Light is a great introduction into the world of Ray Traced rendering of objects and scenes, offering good value for money. However, it's slow speed and lightweight array of features may be too prohibitive to more advanced and experienced users.

✪ ✪ ✪



HIGHLIGHTS
- One, if not the, cheapest Amiga Ray Tracing/ Animation packages.
- Good introduction for beginners.

DRAWBACKS
- Rather slow speed of operation.

What else is available?

SCULPT 3-D ● £85 INC VAT
● PUBLISHED BY BYTE BY BYTE, USA
● AVAILABLE IN UK FROM AMIGA CENTRE SCOTLAND ON 031 5574242
Sculpt 3-D is *C-Light's* main competitor, offering greater complexity and more features – albeit for an extra £35.

SCULPT 4-D ● £320 EX VAT
● PUBLISHED BY BYTE BY BYTE, USA
● AVAILABLE IN UK FROM AMIGA CENTRE SCOTLAND ON 031 5574242
Including numerous enhancements to *Sculpt-3D*, but requiring at least 1Mb of RAM and two disk drives, *Sculpt 4-D* is strictly for power Amiga artists with plenty of the readies. Although Amiga Centre Scotland has just got hold of a Byte by Byte's scaled down version, *Sculpt-Animate 4D Jr.* Look out for our comments on it in the near future.

TECHNOBABBLE

Ray Tracing

A computer graphical term where one or more light sources are assigned to a specific point or object, and the computer then calculates and draws "traces" each beam "ray" of light to their natural conclusion.

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ERASERHEAD BABY

The annual OIS exhibition at London's Novotel is Europe's largest focal point for all things optical – and a glimpse of what the home user will be buying in the 1990s. Andy Storer went along to scan the sights and returned inspired by the world's first rewritable optical disk drive

Image and text retrieval technology is rapidly gaining favour in paper-intensive markets such as insurance, medicine, banking and government. The likes of 3M, Sony, Nippon, Maxell, Philips and TDK have all recognised the immense potential of erasable optical storage and are racing to capture a sizable portion of this lucrative multi-billion dollar industry before the end of the 1990s.

The advantages over microfilm and magnetic tape are immense – optical systems deliver high archival storage capacity with rapid data retrieval and compact handling ease. But the optical market is beset with a bewildering multitude of different systems – WORM, erasable optical, CD-ROM, compact disc-video, interactive videodisc, compact disc-interactive, interactive compact videodisc, Digital Video Interactive, optical memory cards, Digital Paper and floppy WORMS. Wild, eh?

The sixth annual Optical Information Systems and Image Management Conference saw the number of exhibitors up by some 30%, all 110 purveyors no doubt struggling to reach a standard in the read-only, write once and erasable optical information fields.

The ultimate prize will go to to the manufacturer who provides the world's first multi-functional drive able to read all optical formats. In the meantime, Alphatronix's Sony-based erasable optical disk drive is the first contender for the title of supreme storage medium.

Write on... and on... and on

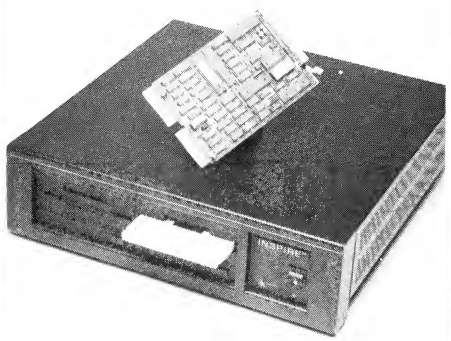
Alphatronix's Inspire series drives provide standard 5.25 inch plug in and play rewritable disks offering upto 1,300 Mbytes of storage in a dual drive unit. As such, Inspire can accommodate up to half a million ASCII coded pages on a single disk.

The laser beam at the heart of the drive read, writes and erases without touching the surface of the disk – beta-tests have shown that a single disk can be rewritten as many as 30 million times with an error rate of only 1 in 10^{12}. What's more, the unit is PC-compatible, though for the asking price of £6,000 for the single drive unit you'd have to have a good reason for buying it. But then at a storage cost of 110K for £1 it's comparable to hard-disk storage in terms of cost-effectiveness, and with an average seek time of 83 milliseconds across the full 1,300 Mbytes, you won't be waiting around long enough to worry about your investment.

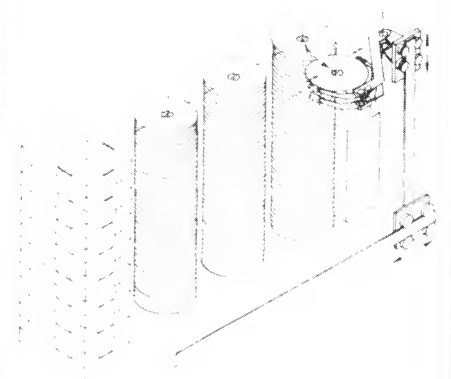
Jukebox fury

However, 1,300 Mbytes is nothing compared to some of the other storage systems on show at OIS. Next Technology launched its 150 Gigabyte Voyager series of CD-ROM and Optical Disk Jukeboxes.

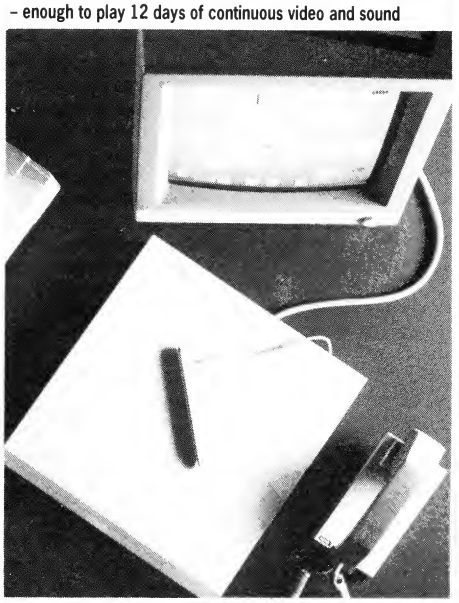
A Jukebox is exactly like you might imagine – a library of discs which are accessed via the host computer using a jukebox mechanism. The difference being that the data, text, drawings, pictures, graphics, video and sound contained on up to 270 CD-ROM discs can be accessed in 300 milliseconds. Thus, a single 150 Gigabyte Voyager unit is advertised by Next as offering the user access to up to 80 million pages of A4 text and pictures or 12 days of continuous video and sound. Fancy hooking one of these up your PC? – you can: it's got MS DOS drivers built in!



• The Inspire erasable disk drive comes in single or dual formats and is compatible with existing backup utiliities. Just as well – 1,300 Mbytes would fill a pile of floppies 17 feet high



• The Voyager CD-ROM jukebox in diagrammatic form. Able to hold up to 8 half-height CD-ROM units and 270 individual discs – enough to play 12 days of continuous video and sound



• Wang's Freestyle – a new innovation in user-friendly interfacing – ingenoius in its inclusion of voice annotation of PC applications...

Showing out

Also on show were quite a few of those natty 'vertical' monitors the ratio of an A4 page with a paper-white 200 dot per inch display. Although these were overshadowed by the presence of a handful of photo-quality 400 d.p.i. resolution screens, companies like REGMA market image processors which reside in monitors to bump up screen updates to less than 300 milliseconds. The effect is astounding – a full page of dense copy refreshes in a flash of the eye.

As fast as you scan

Even more impressive was the range of scanners on show. The current state of the art is in scanners that include Optical Character Recognition. Here you can expect to pay anything from £2,000 to over £30,000, but for those prices you can even get basic units that are able to read text 30 times faster than a typist could transcribe. However, the ability to scan images puts the utility into a different league entirely – even Formscan's low-level Alphaword IV can scan 120 pages hourly, whilst the more upmarket Philips Megadoc system operates at 26 pages per minute. However, Formscan's PageReader, at £36,000 a throw, is able to recognise over 10,000 typefaces – more or less anything except handwriting. Once ported into your word processor or database you're away – with all the normal search and replace facilities at your fingertips.

Freestyle trials

Although handwriting recognition is still some way off, Wang's icon-based Freestyle does go some way to providing the ultimate revolution in the way we interface with machines.

Freestyle is a PC-compatible system allowing voice and hand-written annotation of text and images. It captures a snapshot of the current screen – be it in *WordPerfect*, *Lotus 1-2-3* or even scanned images – and treats that screen as electronic paper which can be annotated by writing, typing or speaking into a handset.

As such you could scan in forms for signatures, or spreadsheets for comments on sales initiatives across a number of networked employees. Handwritten notes are input using a full page tablet, whilst voice notes spoken into the handset can be synchronised to hand-written notes, thus allowing for accurate emphasis on relevant points in a document. On hearing a cue for a voice-note, the reader simply picks up the handset and listens to the annotation. Freestyle also features fax communication facilities, thus pushing its potential further than the local area network.

Future features

Whilst the product on show at OIS is undoubtedly far removed from the needs and budgets of the ordinary user, its showcasing of fledgling technology provides a window on a world which by the mid-1990s should be available at cut-down specs and accompanying costs for us all. ●

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ST

ST on TV

Hands up who saw BBC 2's Open University on Tuesday 17th. Great wasn't it? It was like a trip down memory lane... seeing the UK launch of the ST at the 8th *Personal Computer World* Show (now called the PC Show) all over again. It was September 1985; the Tramiels hit town and the ST was shown to a stunned audience.

Frank Finlay presented the TV programme which demonstrated how two quite different machines were marketed. There was ICL with its one-per-desk machine (yawn) in one corner and Atari with Jack Tramiel's ST in the other. It wasn't meant to be a head to head battle, but rather an insight into how two different companies go about their market research and end up giving the punters what they want. ICL analyses the market at great length and usually caters for niche markets. Atari relies on Jack's gut feeling and aggressive business attitude to provide the masses with what they want. The most dynamic of the two was undoubtedly Jack. His ideals that people want power coupled with the latest technology was spot on. The ST is here today... can the same be said for the one-per-desk?

Talking of Atari, I've heard an interesting story recently concerning Atari US and Atari UK. At the February CES in the States, Atari UK took along the ATW, the ST Laptop, the Mega 1 and the Portfolio. Atari US didn't even manage to display a mock up of the much-vaunted 68030-based Unix machine (aka TT). This situation embarrassed Sunnyvale considerably. Not only is Atari UK's profile sky high, but it's beating its US counterpart at its own game.

Since then Atari UK has been very quiet – Bob Gleadow, MD for operations in the country, has recently been to the States and the Tramiels and due here soon. Something is up, but nobody is saying what...

IS sampling

Innovated Software has put the finishing touches onto *IS Spectroscope*, a sound sample editing package. With *Spectroscope* it's possible to create, modify and analyse samples and then use the results in your own software or other digitising packages.

Small sounds can be captured and altered. An FFT (fast fourier transform) analysis of the sound is possible. There's even the ability to create new mathematically pure sounds by hacking existing waveforms or creating your own from scratch.

IS *Spectroscope* costs £39.95 and is currently being distributed by **Chips, Data Direct, 53 Rugby Rd, Worthing, West Sussex, BN11 5NB** (0903 700804). *Spectroscope* is best used alongside *IS Sound Sampler* (also available from Chips for £69.95). The sampler offers digitising speeds from 1 to 48kHz, oversampling, filtering, reverb, real-time mixing and stand-alone routines for using the sounds in your own programs.

Just a bit more

EA's *Populous* contains several different landscapes, here's how they can affect you:

- **Grass** – your population will thrive on this land type. Not only will the population increase quicker, but they will also live longer. Build as many castles as possible to get your manna level up. Invade the enemy once your population has got to a reasonable size.
- **Rock** – it's probably best to flatten the land to one level above the sea.
- **Desert** – walkers don't live long in these conditions. Make sure there's plenty of flat ground for them to build on.
- **Snow and ice** – this is the most difficult of the landscapes to get going on. Don't start off by giving your people castles to live in – it takes too long to produce other walkers. Click on 'gather together' once you've got a small party together; your walkers will merge and be stronger for it. Keep a check on your leader otherwise he'll die. Once things begin to boom you can start creating castles.

A final word of warning, there are various monsters that appear from nowhere. These guys are invincible and can cause a lot of havoc. The one that appears most frequently is a Slimer lookalike from *The Real Ghostbusters*. This one leaves a trail of swamp behind it. If you follow the monster, raising and lowering the land as you go, you should survive. Another dodgy character is the wizard on a flying carpet; a trail of trees and bushes appears wherever it travels. Naturally this foliage destroys your buildings if they happen to be in the way.

Adrion McHerriot

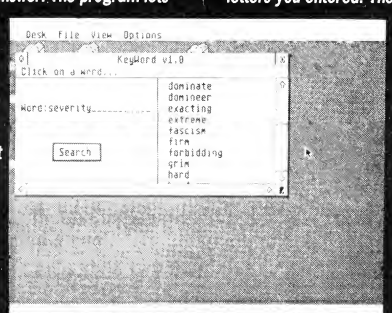
Sticking to keys

Ever been stuck for a word? You know what you want to say, but can't quite think of the right way to express it. Swift reckons Keyword is the answer. The program lets you search through a database of words by meaning, thus enabling you to find exactly what you're looking for.

Keyword operates as a GEM desk accessory so it's on hand whenever you need it. It can be used from floppy, hard or RAM disk. Keyword is of the same ilk as K-Roget – just less sophisticated and cheaper.

All you do is enter a word – or the first few letters of the word if you're unsure how to spell it – and Keyword searches its dictionary for all words starting with the letters you entered. The results are then displayed. After that you can click on the spelling of the word you wish to use; Keyword does a second search to find all the words meaning the same as the word you selected. You can continue selecting words and finding other meanings until you're happy. Over 10,000 synonyms and antonyms are present – I counted them!

Details from Swift Software, 347 London Rd, Hazel Grove, Stockport, Cheshire, SK7 6AA.



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VINE MICROS can supply a variety of high-quality adaptors that enable PC users to connect to standard televisions and video recorders, giving a full colour display.

The CGA version (for CGA cards or EGA cards in CGA mode) supports up to 16 colours in 640x200 pixel display where possible. The EGA version enables 350 line text/graphic modes to be displayed, although only 280 lines of this screen is visible at any one time. A scrolling facility is included to allow you to flick between the top, middle and bottom of the screen. Extra features include a full 64 colour palette. A must for video presentation/titling.

Our UHF adaptors connect to a TV via its aerial socket and also has the ability to go to a video recorder. The SCART version has proved to be extremely popular thanks mainly to its high-quality display and very competitive pricing, though only 16 colours in EGA are possible.

PC-TV UHF CGA £44.95
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PC-TV SCART EGA..... £39.95

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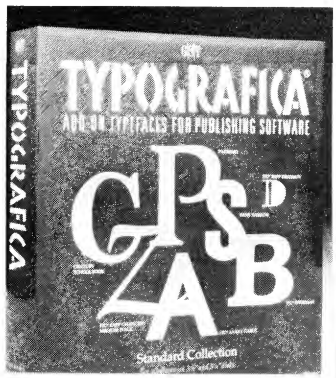
PC UPDATE

Fonts

One of the main troubles with budget DTP programs is the lack of inexpensive fonts to use with them. Extra Bitstream typefaces, the same sort as supplied with most of the GEM-based DTPs and products like *Fleet Street Editor*, cost close to £200 each and you need a separate installation program for GEM, Windows and FSE. *Glyphix* gets around some of these problems, but is not widely available (Try Ctrl Alt Del on 0908 662759).



A new player in the font market is GST, producer of *Timeworks DTP* and *1st Word Plus*. Its new range of *Typographica* fonts work on a similar principle to Bitstream's *Fontware*, and can produce fonts for 9 and 24-pin dot matrix printers as well as lasers. Here the similarity ends, though, as the GST product doesn't take hours to generate large fonts, doesn't need different installation kits for GEM and Windows and can create expanded and condensed (fatter and thinner) fonts, so increasing their variety.

The best part about *Typographica*, though, is that each typestyle costs only £29. Buy three fonts and a symbol set (GST's selection) and it'll cost you £59, while the other six fonts plus dingbats cost £99. The typefaces are based on the set normally supplied with PostScript printers and consist of Sans (like Helvetica), Sans Narrow, Serif (like Times Roman), Courier, ITC Bookman, New Century Schoolbook, Palermo, ITC Zapf Chancery and ITC Avant Garde.

Robot

The idea of automating your PC may not appeal to you immediately, but there are a number of applications where it can prove very useful. Complicated sets of instructions to load and run a program, the need to log-on and download electronic mail or the setup for a particular program environment are three examples. In each of these cases it would be very handy to be able to set up a hot-key or single command to do the job for you.

Robot sets out to do just that by automating virtually any task and responding to keys, timer or program control, which can even come across a comms service such as Telecom Gold. A clever little program – have a guess at the price. £39.95? £59.95? £99.95? No, *Robot* costs £395 plus VAT. I think I'll go for a series of batch files and a copy of *ProKey*. If you have different thoughts, contact ISG on 0732 457001.

Levels of error

When writing batch files you may have wondered why the 'If' command uses a variable called 'errorlevel', hardly the most obvious of names for a storage location. What actually happens is that every command DOS executes generates a return code. If the command executes and exits correctly, this code is set to 0, that is, it has an errorlevel of 0. If an error arises during the execution of the command, though, errorlevel is raised to show the extent and type of the error.

What many programmers have done is to make use of this facility by artificially generating error numbers to return in this variable. Since the batch file processor can check for the value returned in errorlevel, it creates the opportunity for the batch file to test for all manner of things, like the pressing of certain keys, the state of the printer or the screen mode.

Smart marketing

If you could take an existing product, chop bits off it all the way round and sell it for 20% more than the original you'd think you were on to a good thing, right? Well Showerings Business Systems (01-922 8821) must be feeling very good, with the latest product for its otherwise excellent *Portex* information system.

With the growing number of laser printer users in the country, Showerings has spotted a market for single sheet *Portex* paper to use in them. *Portex* uses specially perforated and holed paper which you can fit in a Filofax binder. The laser version of the paper, though, is nothing more than the continuous stationery with the edges guillotined off. It does the job OK, and the line printer font supplied as standard with almost every laser printer is just right for cramming a lot of information into a comparatively small page size. Come on though, chaps, you've chopped your logo and most of your instructions off the paper and are now trying to sell the paper at £12.95 plus VAT for 500 sheets. Seems a bit of a Babyshambles to me.

48 into 24 won't go

Epson, the printer people, recently announced one of the world's first 48-pin printers, developed largely to cope with Japanese Kanji characters. Star, the other printer company, has tried to put one over on Epson by claiming that its latest 24-pin printers can achieve a 48-pin print matrix. The principle is a bit like 9-pin printers doing NLQ printing, which involves moving the print head fractionally up and down to intersperse dots between the dots of the 'standard' matrix.

The Star also sports a lot of new features, including 25 resident fonts, a colour option and EEPROM setup memory, which removes a lot of the dip switches used on previous printers. The main snag with the £599 XB24-10 and its wide carriage cousin, the XB24-15, is that the '48-pin' super letter quality type is not that good. Fancy effects like outline and shadow don't make up for a very spindly appearance to the letters and the choice of only two SLQ styles.

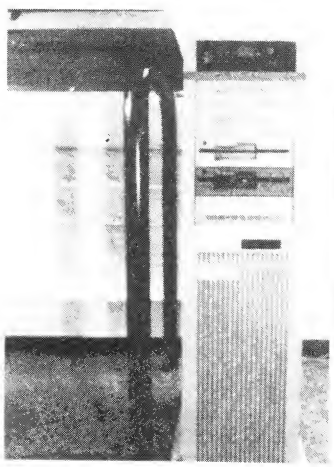
Simon Williams

Synonyms under the skin

A large banner on the Opus stand at the PC User Show proclaimed 'Computing Labour', together with the familiar little red rose. At first sight it appeared that Opus had taken its company named too literally and joined forces with the Kinnock fraternity. On examination though, the Opus – sorry Labour – Party is simply one of the many organisations which has invested in Opus equipment to help in its strive for new efficiency.

AMIGA BLIT

Towering above the competition



Looks have always had a considerable influence on corporate buyers. Many have put the success of the original IBM PC down to the fact that many users bought the machine principally because it 'looked the part'. This may sound laughable, but it has been proven that many corporate buyers who are computer illiterate have bought machines just because they looked powerful.

The latest 'trendy' line in computer boxes is the new 'tower'-like systems that seem to be gaining in popularity. All the latest super-computers such as Atari's transputer workstation and IBM's (not so powerful) PS/2 model 80 come in a free-standing tower system box.

Looking through a certain Danish Amiga magazine (even though I have problems speaking English, let alone Danish), I spotted a very interesting piccy of a new line in Amiga cases. Yep, the Amiga is finally available in a very posh tower unit for all you yuppie computer users that wish your Amiga to have that designer look. The system is based around a twin-drive Amiga 2000 and includes the new AT Bridgeboard PC emulator and a 68020 accelerator card.

Sound Processing With the Amiga

Computers within the music industry have always been very much restricted in their use to applications such as MIDI sequencing, patch editing etc. The latest Amiga music software release is not MIDI-based at all but is in fact a realtime sound processor that uses the Amiga's powerful sound chip to manipulate any incoming analogue sound signal.

The Amiga effects unit consists of a realtime sound sampler that samples the incoming signal at an astonishing 50 KHz, processes it in realtime and then sends it back out through the Amiga's stereo jacks. The package includes about twenty preset effects such as reverb, echo, phase, AM and FM distortion etc.

The Amiga realtime sound processor is marketed in this country by HB Marketing, priced at £86.91. HB can be contacted on 0895 444433.

Super Hang On Meets Rambo

Driving to my workplace in Bath every morning can be a strain on the sanity of even the most resilient among us. Fate seems to dictate that if you are in a hurry, there is bound to be at least one bozo (in a Fiesta usually!) that decides that driving at twenty five miles an hour is a pretty cool thing to do. How do I release this pent-up fury? I have a quick game of *Super Hang On* as soon as I get to work of course!

There I am, speeding along the track like a right nutter when all of a sudden... a bozo turns up infront of me driving at some pathetically slow speed – there's always one, no matter where you go! If only I had a machine gun fixed to my racing bike, I'd make that sucker move!

Surprisingly, *Super Hang On* does indeed allow you to do just that – mount a machine gun on the front of your bike and waste any biker that dares drive below two hundred miles an hour (now that's what I call a sensible speed!).

To access this hidden cheat mode, start by playing the easiest course and then beat the high score for that particular course (if you can!). When the high score table pops up asking you to enter your name, enter **750J** instead. Now press the left mouse button and then press all the following keys at the same time: CTRL, LEFT ALT, Z and T. While still holding down all the keys, let go of the 'T' and the cheat mode will become active.

You can now start a new game – and just press the left Amiga key to blow those Sunday afternoon drivers into oblivion. Thanks to Anthony Shemmans of Bodmin in Cornwall for the great tip – keep those tips flowing in!

Quicky Snippets...

- A new low cost network system is being developed by the creators of the Amiga Amdrive and Minigen Genlock, Associated Systems and Peripherals (ASAP). The system will sell for approximately £45 per node.
- CAD-Vision, creator of the number one CAD package for the Amiga, X-CAD, is planning to release a budget version of the program for under £100. *X-CAD Designer* should be available some time during next month.
- Audio-Visual specialist G2 has launched its Amiga VideoCenter. The system costs under £600 and offers video mixing, genlocking and a PAL encoder. It additionally offers a filtered RGB output and has YC inputs and outputs to take advantage of the new Super VHS systems.
- Commodore has developed a version of the rather creaky language LOGO for the Amiga which may be bundled with at a future date with all Amigas sold to educational establishments. Commodore's push into the education sector finally seems to be paying off, with many education authorities expressing a lot of interest in both the Amiga and Commodore's range of PCs.
- Commodore is discussing the development of a Concept keyboard for the Amiga with top concept keyboard producers, Star Microterminals. The unit should be available later this year.

Jason Holborn

Message Port

If you have any views on any issues raised within AmigaBLIT, or in fact the Amiga scene in general, then I'd love to hear from you. Similarly, if you have any red hot hints, tips or tricks that you feel will be of interest to your fellow Amiga owners, then why not send them into me. The address to write to is: AMIGABLIT, NEW COMPUTER EXPRESS, 4 QUEEN STREET, BATH BA1 1EJ.

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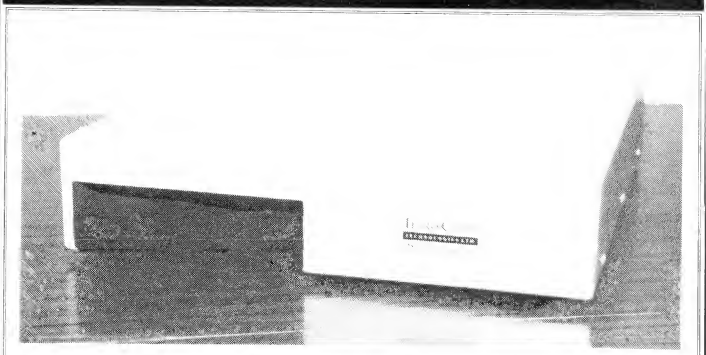

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SPEX

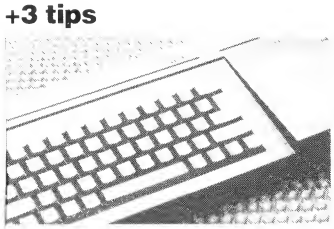
Gunning for the Spectrum

I wondered how long it would take Uncle Alan to get in on the current wave of Bundlemania that's sweeping the computer industry. The bundle in question is, of course, the Spectrum Action Pack which, just to recap, includes the new Magnum light gun and six games – including a specially-written version of *Operation Wolf*.

Although not the sort of thing to show off the Speccy's abilities as an all-round home computer, it's preferable to any number of Air Miles and should mean improved sales. It's unfortunate that the new bundle didn't also herald a price cut. Against the Sega console lightgun package which sells for around £100, the +2 at £150 and +3 at £200 don't look like the kind of bargain they could be at 50-70 quid cheaper.

The ominous shadow of the ST also lurks at the £300 mark. Anyway, feelings of doom, gloom and general misery aside, I'm really looking forward to carrying out an extensive test of the Magnum (only for you lot, of course). *Op Wolf* will no doubt be the first thing I shoot at, but after that this Sega console owner over the road who's been annoying me for years.

+3 tips



• A host of Speccy +3 tips from Eddy Jones

The wonderful Eddy Jones has sent in another jiffy bag or two of those tips and cheat modes he's so good at finding. Firstly, here are some things to do with a +3, in a darkened room if possible.

● +3 owners who press Break whilst reseting will get a test card. Pressing A, E, U will give you as sound to light converter, hence the darkened room. To boogie on down to the pretty patterns, insert a music tape and press Play.

● Finished grooving, hepcats? +3 owners should also try this. Enter +3 BASIC and type: COPY RANDOMIZE then press Enter and it will Error. Press Enter again, and immediately after press PLZC (this may need some practice) and your +3 will return with HELLO THERE I'M A +3. Cute, huh?

Not content with those, he's also uncovered a tipette for *Joe Blade 2*:

● If you type A, N, D, Y on the title page you enter the sound test routine. This allows you to play any of the game's soundtracks at will. And there's more. This talented person has also weighed in with some Multiface pokes:

Operation Wolf 128 = 40756,183 for infinite lives

Out Run +3 = 40628,0 for infinite time

MadMix game = 39932,N. N = lives, 0 = infinite lives

Cybernoid 2 = 30548,0 for infinite ammo and 36060,0 for infinite lives

And our infinite thanks go to Eddy!

Bloody new game

Summer is traditionally the time of year when the whole action-packed and exciting software industry goes ZZZZZZZZZZ and waits for the bad weather and PC show in September before it gets back to normal.

This year looks slightly better than usual for Spectrum owners, however. Coming to my Speccy this summer, if it lives up to the hype – and the piggybank can manage – is Image Works' *Bloodwych*. This looks like being yet another role-playing fantasy type affair, not in fact unlike the amazing 16-bit *Dungeon Master*, which being a devoted Spectrum user I don't know much about (crosses fingers behind back). There's a simultaneous two-player mode and realistic-looking graphics as you let it around a dungeon killing or making friends with the usual collection of silly-sounding folk. Sounds preferable to lounging by the pool soaking up those dangerous UV rays I reckon.

All-time greats

Don Griffith of London sent me a really interesting letter about his all-time favourite Speccy games. They are, in no particular order, as follows (rustle of golden envelope):

Fairlight I – "The game that forced me to buy my own Speccy. Prior to this I borrowed a friend's. He bought *FL* and got addicted and would no longer lend me the machine!"

Head over Heels – "For the novelty of a divided character, its sound FX and its humour."

Magic Knight Trilogy – "Wonderful game from David Jones, full of complex but logical puzzles at a budget price."

Elite – "For its atmosphere – my only regret is that it could not have solid graphics on the Speccy."

Universal Hero – "A mammoth game with loads of puzzles at a budget price. Real value for money."

The Ultimate games like **Knight Lore** and **Alien 8** – "For their 3D design and puzzles."

I'm in complete agreement with you on most of these Don. *Fairlight* particularly. An absolutely amazing feat of programming when it first came out in, oh, years ago anyway. Don's looking for a full solution to *Fairlight II*. If you own one or think differently one any of the above choices, let me know at the usual address.

Robin Alway

No disk outlets

Brian Cavers of Chezron Software has written to say thanks for the plugs his on-screen mag received in the letters pages and SPEX, but he points out that "the info was a bit misleading in that it suggests our drive magazine Outlet is available on +3 disk. It's not! Can you just mention sometime to save disappointed people that it's available on Disciple disk, +D disk, Opus disk, Microdrive and cassette tape. Just about everything but the +3!!" Sorry about that.

The good news from Brian is that all the programs can be transferred singly to +3 disk, although in some cases syntax may need to be changed. See full details in Express 9 or send a blank disk/cartridge for a sample issue. Cassette samples cost £2. The address is Outlet, 605 Loughborough Rd, Birstall, Leicester LE4 4NJ.

Brian also sent in a really useful little routine. Place it in a GO SUB and it gives the BASIC line that called the GO SUB, even if it was called from other GO SUBs.

```
LET PK = PK 23613 + 256 * PEEK 23614 + 2
LET L = PEEK PK + 256 * PEEK (PK+1)
```

You can use it for tracing errors or for passing DATA using RESTORE L.

SECTOR 64 SECTOR

No new 64

Despite curious claims to the contrary, it looks as if the enhanced 64 with more colour and better graphics displays is not going to happen. Whilst Commodore chairman Irving Gould has stated that improvements will be made to the machine, it is highly unlikely that we will be offered an Amiga-like 64. Commodore itself says that any changes are likely to be aesthetic. About three years ago Commodore failed miserably when releasing the +4 onto the streets. The +4 machine could easily have been the new enhanced 64 if only it has sprites and a Sid chip.

Cheats

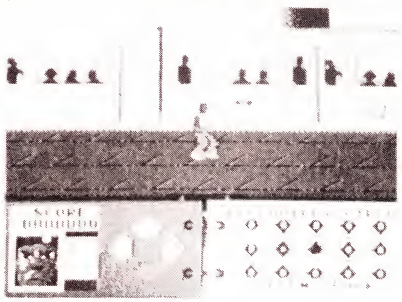
Many thanks this week to Robert Troughton for these great cheats. On all games you must reset the machine. To do this, you must either know the port pinouts like the back of your hand, or get a reset switch/cartridge.

● The first game is **Task Force** from Premier (Players). Load the game as normal, and once it has run reset your machine any way you can and type:

(TASK FORCE)
POKE 37859,252 (unlimited lives)
POKE 10190,252 (unlimited weapons)
SYS 5120 (to restart the game)

● **Street Cred Boxing** (Premier):
POKE 30214,20
POKE 6695,20 (auto qualify)
POKE 4692,3
POKE 30635,3 (extra time)
SYS 4400 (to restart game)

● **Subway Vigilante** (Premier):



POKE 12305,96 (unlimited energy)
SYS 36864 (to restart game)

● **Dinamix** (Mastertronic):
POKE 30375,173
POKE 30390,173
POKE 30405,173
POKE 30420,173 (unlimited time)
SYS 10485 (to restart the game)

New release

Dinamix ● Mastertronic ● £1.99cs

This game is an unusual release which sets you on a (very well drawn) circuit board. Each side of the circuit is has a weighing machine which you have to try to keep level with the computer. The computer starts dropping balls onto the scales to make them lower, and you then have to try dropping heavier balls on the other to balance the two.

Dinamix is a good idea, but after about 20 levels it's just too much. Still, it's a novel idea – could this be the new *Tetris*?

If you like this type of game, then why not give it a try? *Dinamix* is written by Digital Design.

Ian+Mic

Peek listing

This week's listing is a memory peeker written by Sector 64 reader Nigel Myers. After typing this program in you can use it at any time after playing a game for any hidden messages that could be in memory. If you use it in some games you might even find hidden codes.

```
1     REM MEMORY PEEKER
2     REM WRITTEN BY NIGEL MYERS
3     REM FOR "SECTOR 64"
10    C=0:FORA=679TO759:READD:POKEA,D
20    C=C+D:NEXTA
30    IFC<>13295THEN PRINT"DATA ERROR !":END
40    SYS679
50    DATA 169,0,133,251,133,252,133,253
60    DATA 162,0,169,17,32,210,255,232
70    DATA 224,24,208,246,162,0,160,0
80    DATA 169,1,153,192,219,161,251,153
90    DATA 192,7,165,251,201,255,240,32
100   DATA 230,251,200,192,40,208,233,169
110   DATA 17,32,210,255,230,253,165,253
120   DATA 201,24,208,218,169,0,133,253
130   DATA 165,197,201,60,240,208,208,248
140   DATA 169,0,133,251,230,252,208,218
150   DATA 96
```

Demo Charts

Well, this is a first – the first ever Demo Charts, especially arranged by '64 demo library Wicked PD (See ad in this issue).

Position	Demo	Demo no.	Author
1	Digital Acid	09	Ash&Dave
2	10 Ian&Mic Demos	01	Ian&Mic
3	Tron Bikes	14	Bob&Doug
4	18 European Demos	18	Various
5	Rob Whitaker Picture Library	05	Rob W.
6	The Juggler Demo	14	Ratt

For all of those who don't know what a *demo* is, it's short for *demonstration*. Demos are mainly written by enthusiastic computer users who really want to show what their machine is capable of. Some demos can show off the abilities of your 64 in ten seconds, when buying games could never show you in your machine's lifetime. The Amiga's *Juggler* demo is almost the same on the C64 except for speed and colour. Many people say that demos were the thing which brought the Amiga into the limelight. Well, this has been going for a long time on the 64, so if you've been in the dark all this time, then why not catch up now – it's not too late.

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PCW PATCH

The AIs have it

'Expert Systems' is one of those rare computer terms that is nearly self-explanatory. A medical expert system, for example, is a program which can ask you questions on screen, understand the replies you type in, diagnose your complaint and suggest a remedy.

From the Pigg book of records

Cheapest PCW: At a John Russell computer auction in London on April 29th 1989, lot 741, a fully working PCW8256, was sold for £25.

• Do you know of any PCW superlatives? Send to: The Pigg Book of Records, New Computer Express, 4 Queen St, Bath BA1 1EJ.

They are intended to supplement human experts rather than replace them (obviously all they do is organise, manipulate and retrieve information fed into them by humans, and so even the best program can come up with brilliant examples of artificial stupidity) and software letting you write your own expert systems (for any application you choose) is available for most home micros.

M A Grant of Harrow-on-the-Hill ('the dump on the hump' as it is sometimes unkindly called) asks me about AI on the PCW. Yes, Mr Grant, there are several expert systems available, and I reckon *Wise One* is the best. It's a powerful and flexible program and the only niggles are the jargon-ridden manual and the rather unnatural and complicated way of writing rules.

Overall though a genuinely useful program which lets you write real artificial intelligence. Costs £34.95 from **Swallowsoft, PO Box 107, Alton, Hants GU34 5LJ**.

Release me

Micro Designs, already out on the PC, will be out on the PCW 'sometime in June/July'. We're all waiting with interest for this program which looks like it'll be the best DTP program for the PCW yet, better than *Stop Press*, *Newsdesk*, the lot; full review when it does come out...

Z88-PCW

To link a Z88 to your PCW (via a serial interface) you need a cable, which your local computer shop will do for about £15. However Bob Harari of Software Diffusion will sell you one for £11.50; details on 01-376 8038.

More poking fun

The following commands in a BASIC listing can be used to frighten, amaze or impress.

Hide display: OUT 248,8
Show display: OUT 248,7
Scramble display: OUT 245,96 (or any other number under 255, except 91)
Normalise display: OUT 245,91

The 'hide display' effectively turns the ink colour to black. Although it may take a second or two to print a full screen in black before turning it to green again and 'showing' the display, the effect is impressive. And the 'scramble display' trick is great for faking a malfunction to deter meddlers!

Basil Pigg

QL corner

International Cricket

This is a simulated cricket game which can be played between two persons, or with one person against the computer. A series of games can be played, with the team details and current scores stored, so the game can be left temporarily, and resumed later.

When play commences, the field around the wickets is displayed, with the batsmen and fielders. When bowling, six types of ball may be selected, using various key combinations. The field may be set before each ball. Six strokes are available to the batsman, again selected by various key combinations. When the ball has been bowled, if the batsman manages to hit it, a bird's-eye view of the pitch is depicted, with the ball and the fielders represented by coloured markers. An appropriate fielder is selected by the computer, but this can be changed by the player. The flight of the ball is depicted by a marker, with the fielder changing colour if the ball can be reached. The height of the ball is shown by an indicator on the screen.

A colour monitor or TV is required for this game, and it is available on MDV cartridge, in 128K and 256K versions, for £4.99 inclusive, from Nigel Holder, 25 Beightons Walk, Healey Gardens, Rochdale, Lancs OL12 6EA. If you like this type of game, it is quite well done, and well worth £4.99.

Buffered expansion/backplane

Quanta member Richard Cooke has designed a card that plugs into the QL expansion port and enables up to four peripheral cards to be plugged into the QL at once, using a separate backplate. Previous attempts to design an expansion system like this haven't been too successful, possibly because designers have tried to get away with just buffering some of the signals, to reduce the cost. Richard is using no less than five buffer chips, and has therefore been able to buffer every signal, apart from the video lines, which should ensure reliable operation.

More bugs

- **Statements of the form "CURSOR #n, a, b, c, d" are not accepted and give a "bad parameter" error message.**
- **An expression starting with a parenthesis in a data statement results in the rest of the line being ignored.**
- **If GOSUB is used in a short FOR loop, it acts as an ENDFOR, and the rest of the line is ignored.**

The board was designed using Talent's *PCB Designer 1* package, and he reports having had lots of problems with it. I tried to use this package some time ago, and gave it up, being less of a glutton for punishment than Richard. He had to retype the connection list 50 times (there is no way of editing it) before the board could be routed automatically in a single pass. Routing, by the way, is the placement of tracks on the printed circuit board, connecting the various components together.

John Torofex

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BEEB BOX

Play it again...and again...and again...

After the recent famine of games on my desk, a whole bumper bundle has floated down from heaven (well Superior anyway). Yea, and ye shall be rewarded!

I've had a good look at *Play it Again Sam 8* (*PIAS 8*)and a quick once over of *No.9*, plus a bash at *Predator*.

Let's take *PIAS 8* first. Value for your money is the immediate impression, as no less than three disks are included. However, two of the disks only contain one program each, and the other, just two.

I remember when I ran a disk magazine, we packed twice as many programs on to one disk. Still these days disks **are** dirt cheap.

We'll pass by *Around the World in 40 Screens*, as I break out in a rash whenever I hear that *Repton* music.

Winter Olympiad '88 on the second disk is a fine game though. You compete in a number of disciplines for medals. Up to four players can play, and I would recommend at least two, because playing against the computer made me feel like Eddie "the eagle' Edwards.

Completing the line-up are *Ouest*, which is a huge 90-screen arcade adventure, and a real antique, *Mr Wiz*. *Ouest* I didn't really enjoy, although it undoubtedly is a challenge, but *Mr Wiz* is still fun to play.

I can't report much on *PIAS 9*, because the games kept crashing on my Master 128. You do get a new release, *Camelot* on this together with "oldies" *Spycat*, and the *Life of Repton*. More notes on this one will follow if I see a working copy.

Predator, of course has to be the pick of the bunch. Programmed, needless to say by Peter Scott, the gameplay sticks pretty close to the original. But, if you've been in a South American jungle for the last 20 years, I will explain.

Nailing down those files

I recently had the uneviable task of trying to recover some important text from a corrupt disk.

To cut a long story short, I managed the feat. But the person who had lost the text failed to realise I had recovered it.

I had used filenames that seemed logical enough to me, but didn't actually mean anything to her.

So – the moral of the story is; don't forget to use sensible filenames, and make use of directories wherever possible.

You play Arnie Schwarzeneggar, musclebound hunk. Your aim is to get an alien creature, before it gets you.

Sounds simple, eh? Well, maybe not, as the creature is pretty hard to pin down to say the least. Criticism has been levelled at the game, but I can reveal that this is mainly due to restrictions imposed by the licensing company, not poor programming.

Andrew Brown

MSX TRA

MSX 2s gearing up

Although the MSX 2 is supposed to use the Z80A processor, I've just seen a photo of the Sony HB-F1XDJ – itself an MSX 2 – which appears to offer variable processor speed.

If so, the computer must at least use the 6MHz Z80 chip, or a compatible device. The computer itself offers normal variable speed setting. At least the MSX is getting a faster processor, and not before time, either.

Handy tip

A Mr Ellis of Edinburgh has pointed out another joystick featuring two independent fire buttons – thus making it ideal for Konami games. The Quickshot II Turbo can be made to work as an MSX joystick by setting the three-position switch on the bottom to CPC464.

As I haven't got a Quickshot Turbo to try this out, I picked up the new Quickjoy Supercharger, which also sports a similar three-position switch, and – sure enough – it works a treat. The top, thumb-operated, fire button acts a normal fire button, and the trigger finger-operated one selects special features, such as your options in Nemesis.

Hopefully, any joystick with two fire buttons and a CPC464 setting should work in a similar fashion.

Still no news about a European launch of these computers, but I do know that the cheapest of these machines retails for about £299.00 in Japan, and has a single-sided disk drive built in.

Rock on

It's strange how all the old games keep reappearing in new guises. We've had *Pac Man*, *Pac Mania* and *Pac Land*, and now we have the follow-up to *Asteroids* – Image Works' *Blasteroids*.

This game, which is I believe Image Works' first MSX release, is certainly based on the *Asteroids* theme, but does have many extra features. For example, your ship can be transformed into one of three different types of vessel, each with a special capability. Also, destroy certain ships or asteroids and power pods are left for you to collect, each giving you extra energy or firepower.

The game also offers a novel two-player option – you can play as two individuals or "join your ships", where one player controls thrust and fire, and the second controls the turret. This option offers most firepower.

Various sectors have to be cleared, and then you can face Murkor, who will not only try to ram you but will also send out ships to attack you. There are several galaxies for you to clear, so you will meet Murkor many times.

MSX *Blasteroids* is pretty colourful when compared to some of the latest software on our format. All the graphics are UDGs and not sprites, though. I still found this game most enjoyable, with good sound, adequate graphics and a high playability factor. Maybe *Blasteroids* isn't a really sophisticated shoot-'em-up like *Nemesis* or *Salamander*, but it plays well – but it is a little pricey at £9.99cs, £14.99dk. My rating? Seven out of ten.

Keith Neal

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CPC centre

Summer games confound weathermen

Summer is traditionally the time when things go quiet on the computer front. As the weather gets tropical *(shome mishtake shurely – Michael Fish)* the poor CPC tends to get neglected as outdoor pursuits beckon.

That's the theory, anyway. But the fact is that British weather can never be relied upon – or at least, can never be relied upon to be any good. And in any case there appear to be far too many eagerly awaited games coming out for your CPC to become a very expensive dust collector. It really does seem as if the CPC revival is more than a temporary blip, I'm glad to say.

● There's CDS's *Tank Attack*, based around four countries at war. Battles, fought as artillery duels and tank shoot-outs, are seen through the binoculars of the general staff. The special attraction about this one is that it's an interactive computer/ board game, so that besides the familiar disk or tape you get what looks like a cross between Monopoly and Cluedo.

It's tough to make snap decisions about games such as this one, since its true worth only emerges after a few weeks of familiarity, which will breed either contempt or content. So I won't bother to try.

● Next there's *Licensed to Kill*, which has all the hallmarks of being... another James Bond tie-in. Domark seems to be turning these things out faster than Cubby Broccoli and the lads themselves, and not always with entirely satisfying results (I didn't rate *Living Daylights*, for instance). But it seems we're promised a little more this time. A Domark spokesperson tells me it features "full control of 007 in an exhilarating helicopter chase; a death defying underwater scene dodging sharks and Sanchez's thugs; and a gut-churning finale – a race to the border as Bond, in a stolen crop-duster, attempts to prevent Sanchez making off with a massive haul of drugs stashed in a convoy of petrol tankers. It's totally brilliant!" Well, they would say that wouldn't they?

● Thirdly, expect fairly soon *Bomber – Tactical Air Combat*. It's the first project for Activision by Leeds-based Vektor Grafix. *Bomber TAC* according to an Activision spokesperson, is a "multi-aircraft flight simulator featuring aircraft such as the Tornado IDS, the F-4 Phantom, the F-111F Aardvark and even the Mig-27 Flogger D, the Soviet Black low level attack aircraft." And Vektor Grafix boss Andy Craven told me, "I've always believed flight sims should be fun to play: so many seem to put too much emphasis on factors which detract from the fun element. We've deliberately created *Bomber TAC* so that the player can choose between a strategy approach and playing an outright shoot-em-up."

● Fourthly and finally US Gold have done the obvious thing and sequelled (is there such a word? There is now) their monster *Outrun*. This time it's *Outrun Europa*, offering you the opportunity to crash in city and country settings throughout the EEC. You have been warned!

Letters, pray

CPC Centre welcomes your letters, comments or news. So if you run a CPC user group, have just written a Macintosh emulator for the 464 or just want to tell me what a truly brilliant column this is, write to: **Steve Carey, CPC Centre, Future Publishing, 4 Queen St, Bath BA1 1EJ.**

Static warning

Earlier this week a CPC-owning mate (is there any other kind?) had the awful misfortune to damage his machine with static electricity. He'd realised after powering up that he hadn't plugged his joystick in. As he went to do so, a spark leapt from the joystick socket to the computer plug – and that was that. It was still under guarantee, and the shop owner very generously took it back and exchanged it, though he was obviously under no obligation to do so.

The moral is clear: don't plug or unplug peripherals while your CPC is on, and make sure you've earthed yourself before going near any sockets. Some types of carpet seem to encourage static, too, so be careful out there!

(That reminds me. When Trenton Webb, games reviewer on Amstrad Action, £1.25 from all good newsagents, buy it now, is reviewing a game, I can really get him sweating by standing behind him and shuffling my shoes on the carpet. Then I touch his ears, and Zzzzt! "Ouch")

Arctic Fox aid

Whether you rushed out and bought Electronic Arts' *Arctix Fox* when it came out, or have only bought in the past couple of weeks on the new EA "Classics" label, you'll appreciate I know this short but sweet disk poke from Tony Jones. It gives you infinite shields. Run it with *Arctic Fox* in the disk drive.

```
1 'Arcticfox - disk
2 'by Tony Jones
3 'NCE May 1989
1Ø MODE Ø:BORDER Ø
2Ø FOR i=Ø TO 15:INK i,Ø NEXT
3Ø LOAD"openi",7CØØØ
4Ø INK 1,6:INK 2,11
5Ø INK 3,5:INK 4,26
6Ø MEMORY &176F
7Ø LOAD"main",&177Ø
8Ø POKE &A3ØØ,Ø:CALL &177Ø
```

Steve Carey

• CDS's computer-cum-board game Tank Attack

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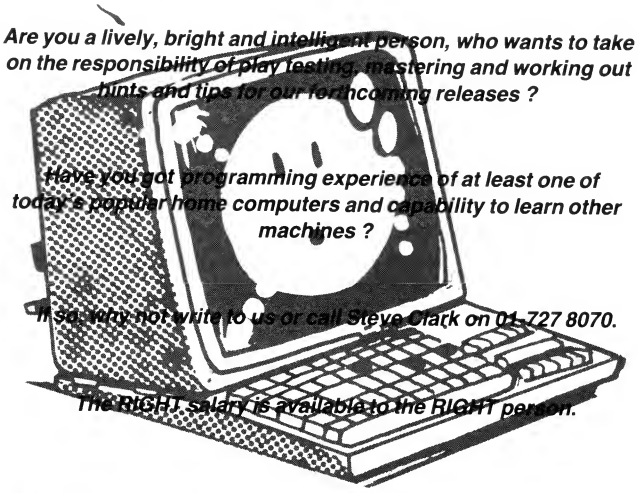

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Problems with your computer? Express's Agony column has the answer. Write in strictest confindence to Uncle Techtip.

Best tips win a freebie – so don't forget to tell us your address and machine

• Trouble connecting peripherals to your Spectrum may just be due to a faulty CPU (Trouble on the M1)

TIP

Trouble on the M1

We may be able to offer help to two of your readers who wrote about their problems in issue 27.

Simon Daniels had a problem connecting his interface 1/microdrive to a Spectrum. He says that on typing a command only a question mark appears as if the command has not been recognised by the computer. It seems to us as if Simon has met a fairly common problem which is likely to relate not to his interface but to the Spectrum itself. The question mark signifies that the computer is not recognising the command and while the problem may be a dead interface, it is just as likely that the signal M1 is not being sent effectively from the computer to the interface. There may be two reasons for this.

First, the Spectrum edge connector has a habit of getting dirty after a period of use. We've found that cleaning it with an ordinary pencil eraser will often do the trick (be careful not to let the bits fall into the computer). If this doesn't work, it may signify that the M1 line in the Spectrum's CPU is faulty. Our experience suggests that as many as 10% of early Spectrums have this problem. For most users it doesn't matter. Even if the M1 line is down, everything appears to be working normally until you fit an Interface 1 or disk interface to the computer. To fix it, you'll need to send your computer to a repair centre and probably have the CPU replaced – a fairly routine repair job. But first, test the interface on another computer.

Simon Keith Hobbs talks about problems using a disk drive with his Amiga. Not sure if we have right the answer here but Mr. Hobbs problem may relate to the fact that when an external drive is attached to the Amiga, a certain amount of RAM space is taken up. The result can be problems with some of the larger applications packages which need to use this RAM. The solution is to switch off the external drive until you're finished with the application then reboot afterwards.

Alan Miles, Miles Gordon Technology

HELP!

Defective dump

I have just bought a second hand Epson MX80 to use with my Atari 1040STF. It works fine with *1st Word Plus* etc, but for some reason I cannot get a decent graphics screen dump either from the desk-top or from software i.e. *Degas Elite* or *Export Label Maker*. When I do *alt/help* the print-out is squashed up to about half width as if the printer was in condensed print mode. Yet if I print a text file direct from the desk-top it prints OK. According to Epson my dip switches are set OK. I am at a loss as to the reason for my half-width screen dumps.

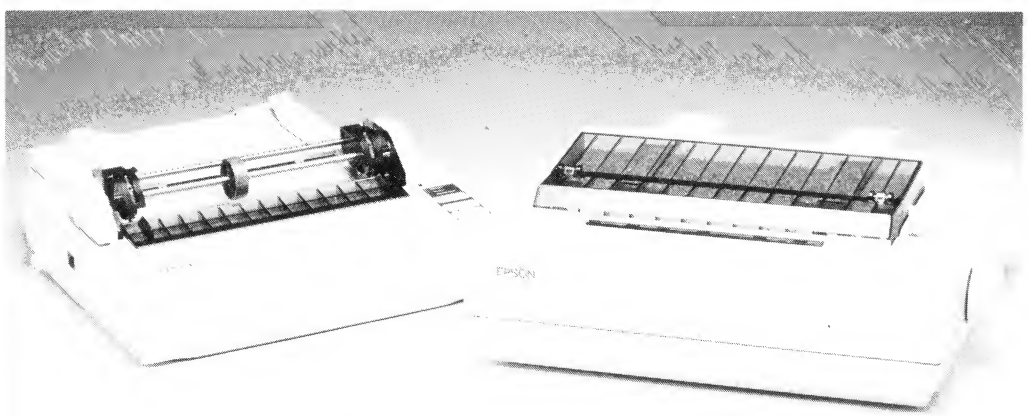
Clive Parker, Pill, Bristol

• When the ST prints screen dumps it sends control codes to the printer so that it can reproduce what is on the screen. It would appear that the control codes are incorrect for the MX80 and consequently you have a distorted image. Try using a screen dump utility from the public domain which will allow you to input the correct control codes for your printer. Text files are printed correctly because the file is sent to the printer as a pure ASCII file and so does not rely on control codes to achieve a reproduction.

TIP

Spectrum channels

I had a call from a very nice guy from Scotland by the name of Bri Wallace, offering help to X (*Express* issue X) who was having trouble selecting channels when using the MIDI port of his Spectrum. The secret is to use the Play command with the 'Z' directive. Firstly, you must send PLAY Z128 which tells



• Trouble with screen dumps on your printer? You could have trouble with control codes, even though ASCII files are being printed correctly (Defective dump)

HELP!

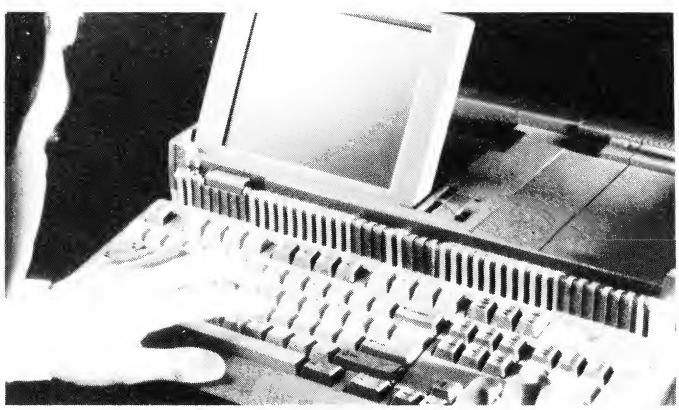
PPC TV?

I am a young man of 72 summers and the proud owner of an Amstrad PPC640 laptop computer which I have had for almost a year. Although I find the LCD screen display usable for most processing it would be nice to have a larger screen when using spreadsheets and playing games. Being a pensioner, I can't afford a replacement monitor, so is there any way that I can connect the PPC to my television?

Mr. I. K. Bridgemaker, Bognor Regis, West Sussex

• You're in luck. A company by the name of Vine Micros LTD markets a range of display orientated add-ons for the Amstrad range of machines to allow connection of 1512s to colour monitors, colour televisions to be used as monitors and a little interface box which connects the PPC range of machines to a standard television set. The interface comes with a range of utility programs to allow users to set up the television for the clearest picture.

I've tried the device with a PPC640 and can wholly recommend it – the interface worked perfectly. Text was legible even in 80 columns and games works very well. The nicest thing about this interface is its price, at £39 it's within the reach of any PPC user even pensioners. Contact Vine Micros on 0304 812276.



• Can Amstrad's PPC be connected to a TV as an alternative to the built-in LCD screen? (PPC TV?)

the keyboard to expect a patch change. Following that, you must send another Z with the channel number you wish to use. So the whole thing would look like: PLAY Z128 Zchannel number.

Thanks very much, Bri.

TIP
Bug squashed

Here's a cure for Ronald Ball's bug of the week (*Express* issue 27). This is in fact only a buglet, as it can be quite easily solved. The cure only works with *Locoscript 2*, but nobody's perfect.

Here's what to do: Save your *Protext* document to disk as normal. Load *Locoscript 2*, create a new blank document and use F1 'insert text' to paste in the next *Protext* file. You will see that at the end of each line in a paragraph is a hard return and at the beginning of each following line is an upper case Greek sigma (Σ).

First press Alt and F3 to change to the Greek character set mode, then use Exchange to automatically replace the Return sigma combination with nothing. Hey presto, you have paragraphs with all the hard returns – except the ones you want at the ends of paragraphs stripped out.

Chris Mann, London

TIP
Speccy on a Yamaha

Having read the letter from K. J. Laken in *Express* issue 27 in which he asks for help with the Yamaha PSS480 keyboard. I think he may find the following interesting.

To use more than one voice controlled by the Spectrum +3 you must first select MIDI mode 99 on the PSS480, you can then send the control codes required to select which voices and which MIDI channels they will be assigned to by using the spectrum Play command.

The codes are sent as two bytes, the first byte being called the status byte and tells the Yamaha that a voice is going to be selected and which channel to assign it to. This status byte ranges in value from 192 to 207 and includes the channel number e.g. 192=channel 1, 193=channel 2 etc.

The second byte is the voice code itself and is in the range 0 to 104 (printed on the front of the Yamaha). Codes 100 to 104 are for the voice banks.

As an example, if you wanted to select the electric bass on channel 5 and the flute on channel 10, you would need to enter this program line:

```
10 PLAY "Z196Z80Z201Z20
20 PLAY "Y5NDECcg", "Y10NDECcg"
```

Line 10 selects the channels and the voices and line 20 plays a famous five-note tune as a demonstration.

Dave Hayward, Gloucester

TIP
Soft 64 reset

Re. the letter in *Tech Tips* issue 27 about resetting the Commodore 64. I reset and recover a program by alternating on the two keys Restore and Run stop. This saves all the time waiting to reload, resetting this way is a matter of a few seconds.

C. E. King, Mortlake, London

• This will work only if the program that you want to reset doesn't knock out the vector routine.

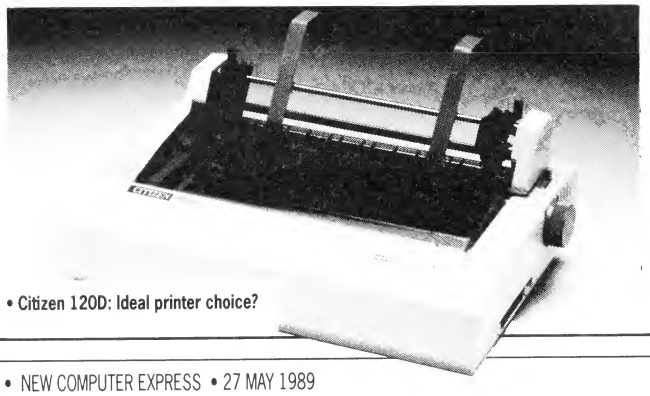
TIP
Bug squashed

I intend to purchase an Atari 520STFM in the near future and I was wondering about printers (*They're a constant source of worry to me too – Uncle TechTip*). I was thinking of purchasing a Citizen 120D dot matrix printer for use with *1st Word* and various graphic packages for text printing and screen dumps. Could you tell me, once I have the printer connected to the ST if it will need anything to start using the printer for the said purposes? Also, could you tell me what is a printer driver? Will I need one? From where can I obtain one? I would be grateful for any advice or information you could give me concerning this subject as I have very little experience concerning the Atari ST.

David Brass, Stafford

• The Citizen 120D printer is a very popular machine at the moment and should serve your purpose admirably. Most of the applications programs that you will use support the Epson series of control codes for printing things such as graphics and various fonts. The Citizen has an Epson compatible control code set so will work with almost anything you care to use.

Printer drivers are short text files that contain instructions for applications accessing printers. If you're using an obscure printer then you'll usually need a printer driver in order that your programs can use it (with a Citizen printer you won't need to get one). Printer drivers are available from the public domain.



• Citizen 120D: Ideal printer choice?

BUG OF THE WEEK

Anco's otherwise brilliant Kick Off has got a minor bugette which strikes when one of the players kicks the ball over the touch line. Every now and then, the player who runs to fetch it will not throw it back onto the pitch, but instead lob it in the opposite direction. It seems to happen only when there are no other players nearby, and unfortunately crashes the game, leaving those players on-screen running to and fro in a panic until the whistle!

S. Matthews, Huddersfield

Anaglyptus mysticus • The only member of the genus even remotely interested in football

HELP!
Volts of no confidence

I recently purchased a second-hand Pace 5.25 inch drive from a car boot sale (*...oh no, I just know what's coming – Tech Ed*). The drive was intended for use by my son with his Spectrum +. The idea was to use this via an MGT plus D disk interface.

Upon examination I discovered that the drive was a low voltage unit designed to work with the BBC B micro. I contacted Pace to enquire of the availability of a suitable power supply and was told that this would cost £39. Considering I had already paid out £59 for the MGT interface, I was a bit reluctant to pay a further £39.

So I've turned to your excellent publication to see if you can solve my problem. I've seen advertised in some electronic magazines power supplies advertised as suitable for use with this disk drive, but not knowing what voltages are required for the drive on what lines I do not know which if any to purchase.

The drive has one cable consisting of 3 wires which are the same colour as mains cable. This ends in a plastic plug. I've written to Pace about the drive's voltage requirements (3 months ago) but have not received a reply. So in desperation I am writing to enquire:

1. Do you know of a suitable cheapish power supply, or failing that,

2. The output voltages on the external power supply socket on the BBC

I look forward to your reply.

C. R. Clement, Port Talbot, West Glamorgan

• I've tried contacting Pace for a schematic of your disk drive but without luck. I would expect the drive to require either 12 or 5 volts, but without further information it's difficult to be sure. If any funky *TechTippers* know which voltage, call your Uncle on 0225 446034 and I'll pass on the guff.

As for a suitable power supply, i.e. one supplying either 12 or 5 volts, check out the latest copy of the Maplin catalogue, wherein you'll find a large selection of home brew supplies that you can build yourself cheaply and easily.

HELP!
ST printer

I have just recently started to buy your magazine but judging by what I've thus far read, I have to say the advice you hand out is extremely good.

I have decided to buy an Atari 1040 and printer for word processing, spreadsheets and simple graphs.

I have narrowed the choice down to the Epson LX800, Panasonic 1180 and Star LC10. In your opinion which would be the best overall for the tasks mentioned above? If you don't reply to this letter I will probably decide on the flick of a coin, so please help.

Mr. D. Verma, Southall, Middlesex

• It is my considered opinion that any of the printers mentioned in your letter would be perfectly suitable for the applications you suggest.

The deciding factor should be price. On past form, Panasonic seems to have cheap printers tied up so maybe you should be taking a second look at Pan's baby...

• What's the best printer for "word processing, spreadsheets and simple graphs" on the ST? (ST printer)

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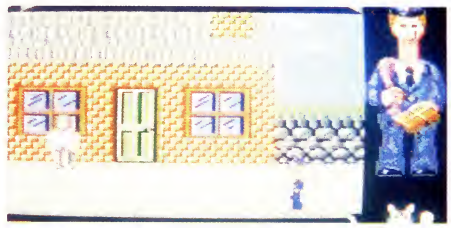
Outshining the rest

Rik Haynes totals out previewing three new games

TOTAL ECLIPSE INCENTIVE

Total Eclipse, the Incentive game featuring its spectacular and award-winning Freescape solid 3D landscaping system, is due for release shortly on ST and Amiga. Already well received on the Spectrum, C64 and CPC (*Express* reviews in issue 2 and 26), we can't wait to get our hands on the promising,



POSTMAN PAT ALTERNATIVE

"Postman Pat, Postman Pat – smack him in the mouth with a baseball bat" (© 1989 Andy Storer). Claiming to be the first budget licensed game, *Postman Pat* is due for imminent release on Spectrum, C64 and CPC, with ST and Amiga versions to follow in July. You control Pratt on his post-round, delivering parcels and letters to the likes of Ted Glen, Peter Fogg and Miss Hubbard (any relation to Rob?).

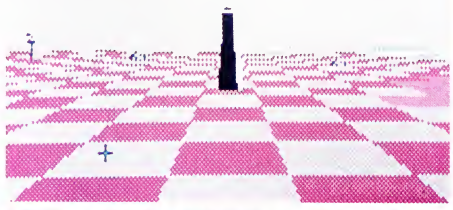
INTERNATIONAL ATHLETICS
ACTUAL SCREENSHOTS/CRL

On your marks. Get set. Go – and launch that sports-sim, as the athletics season gets in full swing. As if there weren't enough sports-sims already on the market, CRL is due to release another on the Amiga in July with an ST version out a month later. Seriously though, there's a lot of tough competition out there, so *International Athletics* will have to be good.

ARCHIPELAGOS • *Logotron • PC • £29.99dk • Amiga version reviewed in Express 27 • Also on ST*

Another five star game (this time on the Amiga), *Archipelagos* is just as impressive on the PC – considering this deck's audio-visual deficiencies. Both the CGA, and especially the EGA, displays are visually excellent, although a little slow on the screen update. Luckily, audio is kept to a minimum. Well done, Logotron, another winner thanks to *Archipelagos'* surreal and addictive gameplay.

✪ ✪ ✪ ✪ ✪



And there's more...

Rik Haynes rounds up the week's updates

ROBOCOP • *Ocean • PC • £19.95dk • C64 version reviewed in Express 7&8 • Also on Spectrum, CPC, MSX • Out soon on ST and Amiga*

After a five star reception on the C64 last Christmas, and a subsequent number one position in the charts ever since, *Robocop* has been rather unsuccessfully converted to the humble PC. Crummy display, terrible audio and awkward character control make PC *Robocop* immediately forgettable. Let's hope the ST and Amiga versions do better...

✪

• What a choice: Robocop in yellow...

• ...or in white

TEST DRIVE II • *Accolade • C64 • £9.95cs £16.95dk • PC version reviewed in Express 26 • Also on Amiga*

Oh dear, we were playing this game two years ago, and it wasn't that good then either. It looks like *Pitstop II* from Epyx still holds the world C64 racing-sim championship title.

✪

● This week saw us Getting Fresh over *Gilbert*, showing out with *Shogun*, *Steel*-ing Accolade's *Thunder*, waggling *Summer Games*, Gremlin *Hate*-ing, ridding the *Storm-lord*, day *Dream*-ing with Rainbird, while *Rising* to Cinemaware's occasion!

GILBERT

AGAIN AGAIN

ST • £19.99dk
Also on Amiga, Spectrum, C64, CPC, MSX

• C64: 'Snot what you do, it's the way that you do it

The obnoxious, repulsive, unpleasant and thoroughly disagreeable creature Gilbert makes it onto computer format in this arcade adventure. It's the first offering from Enigma Varations on behalf of Again Again, both of which appear to be mighty proud of their offering.

• ST: Don't get snotty with me, pal!

● GAMEPLAY

Gilbert's television character is played upon heavily here, with his Royal Yukkiness possessing various abilities such as being able to "snot" over opponents.

He has to escape from his home planet Drill and get back to earth within 24 hours. That time limit is slashed whenever he comes a cropper. In between avoiding nasties he has to play arcade sequences such as simple memory tests and mouse-driven front view shoot-'em-ups.

All this effort is to gain bits and pieces to help him along the way, and ultimately to get back to Earth.

In between the extra arcade sequences he's running around (side view) snotting opponents and such like. Extra powers are available based on a multitude of flatulent acts too immature to mention here.

● GRAPHICS AND SOUND

Graphics are clear and well defined with all the fussiness blending in to make a most agreeable picture. Care has obviously been taken to make the central character look believable. Better known character licences have been laughed off due to this flaw.

Players get a choice between sound effects and music, both of which are bland enought to be passable.

● OTHER VERSIONS

Gilbert is making an appearance on virtually every mainstream micro including MSX.

● EXPRESS VERDICT

So much thought and care has obviously gone into Gilbert that it's hard to pinpoint what exactly the whole affair lacks.

There's plenty to do, it's well crafted with a few wacky bits to keep your attention. The only problem is that it isn't a hell of a lot of fun.

✪ ✪ ✪

Bill Carson

WEIRD DREAMS

RAINBIRD/MICROPROSE

ST £24.99dk
Out soon on C64 and PC
Currently under development on Spectrum, CPC, Amiga

After its successful showing on the Saturday morning kids TV show, *Motormouth*, the much awaited surreal arcade adventure *Weird Dreams* has finally hit our ST screens, but is it a dream come true...?

GREAT VISUALS

● GAMEPLAY

The designers of *Weird Dreams* must have had a bad experience with the NHS in the past, because the game sees you lying comatose on an operating table, having nasty nightmares while some quack hacks you to bits.

Taking control of your nightmares can be a dangerous action to take though, as you find out as you drift from one fantastic (weird?) scenario to another – from all the fun of the fair, through a walk in an English country garden, to being caught up in a giant candy floss machine!

● GRAPHICS AND SOUND

Weird Dreams is visually stunning, with highly original, imaginative and atmospheric backdrops and sprites, all thanks to the expert artistic talents of Herman Serrano. It looks as good on your micro screen as it did on the TV.

Audio is less impressive, with sound-chip generated soundtrack and sound spot-effects – both okay, but certainly not memorable.

● OTHER VERSIONS

The C64 and PC versions should be completed first, with a July release date currently set, The other versions are due to follow shortly afterwards. Keep your eyes peeled for updates when we get hold of 'em.

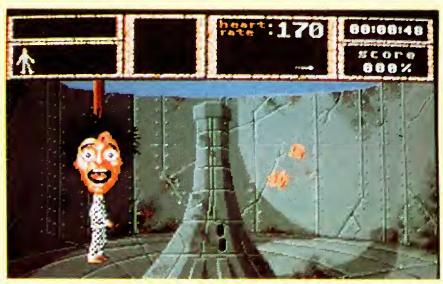
● EXPRESS VERDICT

Weird Dreams is not so much weird, as a great opportunity missed. Its brilliant concept and audio-visual execution are completely negated by its shallow gameplay. If you saw it on *Motormouth*, there are very few surprises left in store, and the linear gameplay certainly won't keep you amused for very long.

You must have a look at *Weird Dreams* because it's one of attractive and visually original games we've ever seen – but you'd be a fool not to try playing it before purchase.

✪

Rik Haynes



• Don't be a bighead

• Something fishy about this...

• Getting a buzz out of the funfair

STORMLORD

HEWSON

C64 • c £9.99 d £14.99
Also on Spectrum, CPC
Currently under development on ST, Amiga

Hewson's horizontal platform scroller pits you against various dream-world creatures, all out for your blood...

● GAMEPLAY

Your challenge (or so the spiel would have you believe) is to free imprisoned fairy folk before they're wiped out by the evil Queen. The fairy folk are mainly in the guise of naked young women reclining on platforms or held in large urns. Rescuing involves the usual rushing to and fro, throwing daggers and orbs, jumping and avoiding ➤

sundry nasty creatures. You can collect keys umbrellas, pots of gold and women – but rescuing the naked women entails the risk of purple balls, so beware!

● **GRAPHICS AND SOUND**

Graphics are very colourful and very well drawn. The sprites move smoothly and the whole thing works well. Sound is in the form of a continuously playing, suitably eerie ditty which, although again well done, becomes rather a pain and will have you reaching for the volume control.

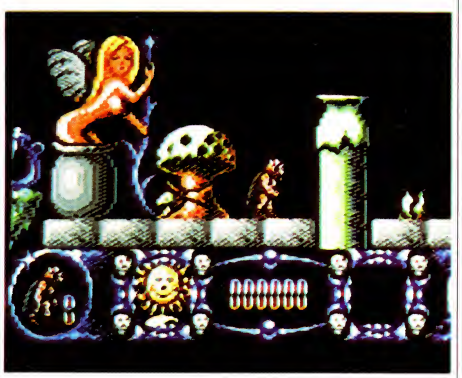
● **OTHER VERSIONS**

Spectrum and CPC *Stormlord's* are out on the streets now, but ST and Amiga gamesters will have to wait till September.

● **EXPRESS VERDICT**

Well drawn – the graphics are as good as you'll get on an 8-bit machine, good sound, but minimal gameplay.

✪ ✪ ✪ **Fielding 'Purple Balls' Mellish**



• Naked nymphs get horizontal in this scroller

SHOGUN

INFOCOM

Amiga. 24.99dk
Currently under development on PC

• You've survived the most hostile seas known to man. Now all you have to do is make it through a week in Tokyo...

Japan has invented a few things (sumo, politeness, karaoke) and has nicked a lot of ideas from other countries (writing from China, agriculture from Korea, education/ baseball/ crime from America etc) but done them a lot better. None of which is anything to do with *Shogun*, the Infocom adventure version of the James Clavell novel set in feudal Japan nearly 400 years ago.

● **GAMEPLAY**

You are John Blackthorne, British pilot of the ship Erasmus. If you can make it through the storm and land in the Japans, you find a culture totally alien to that of your native England.

You're a rough, cursin', swearin' character and the sort of language you are used to, and which your crew members happily understood (mostly kicks in what the Japanese call 'family jewels') only gets you trouble with the politer (but often vicious) Japs. Play it right though and you end up being right-hand man to the Japanese generalissimo Toranaga.

If you've read the book, the plot of the game will be familiar, though it won't help you too much.

This is a standard text adventure with the usual Infocom touches (you can undo the last move, save and restore positions, work in verbose or brief modes etc) and also has a very welcome set of on-disk hints you can access any time by typing HINT, in increasing degrees of obviousness.

● **GRAPHICS AND SOUND**

The graphics are not abundant but what you have is OK. The Japan scenes are nicely done in the style of those woodblock print artists who invented the idea that Japanese have slanty eyes.

If you made it through the book, which had several hundred pages and no pictures at all, then you'll be quite happy. No sound.

● **OTHER VERSIONS**

Shogun will be out on the PC later this year.

● **EXPRESS VERDICT**

A good adventure implementation of the novel which captures the atmosphere very well. If you liked the book this is well worth checking out.

✪ ✪ ✪ ✪ **Basil Pigg**

LORDS OF THE RISING SUN

CINEMAWARE

Amiga £29.99dk
Currently under development on C64, ST, PC

Lords of the Rising Sun is the latest epic computerised movie from American software house Cinemaware, the team responsible for *Defender of the Crown*, *Kings of Chicago* and *Rocket Ranger*. So how does *Lords of the Rising Sun* shape up?

● **GAMEPLAY**

Lords of the Rising Sun is set in 12th Century Japan, with you in the role of a young hero on a mission to fulfil your ultimate ambition – to become Shogun. In order to achieve this you must first capture all the castles in the land and defeat all your adversaries.

The main game is played over a map of Japan, with you controlling your forces via cursor. Any action can be then expanded into the encounter screen, which can range from a full battle to a simple meeting scenario.

The rest is up to you, as you play out your ingenious, devious or just plain incredible strategies to become top dog...

GREAT VISUALS

● **GRAPHICS AND SOUND**

Audio-visuals easily meet expectations for a Cinemaware release – after all, this is what makes or breaks a game of this ilk. *Lords of the Rising Sun* makes it with flying colours, with beautifully drawn and coloured animated screen displays and apt sampled sound spot FX during play.

● **OTHER VERSIONS**

PC *Lords of the Rising Sun* is due for release in October, with C64 and ST versions to follow in December.

● **EXPRESS VERDICT**

Thankfully, *Lords of the Rising Sun's* gameplay is more demanding than the average Cinemaware release, but it's still not that taxing. The whole affair reminded us of Cinemaware's earlier success, *Defender of the Crown*, which did more than its fair share to highlight the Amiga's excellent audio-visual capabilities.

✪ ✪ ✪ ✪ **Rik Haynes**

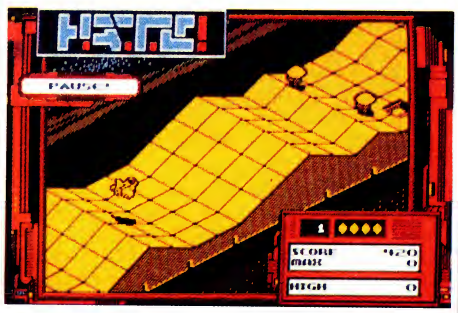
急慎なプログラマーでしょうか

そうかな

HATE

GREMLIN

CPC • c £9.99 d £14.99
Also on Spectrum, C64
Out soon on ST, Amiga



• Deja vu? Vortex all over again

Gremlin's latest blaster zooms in on every format this side of Vega and looks like doing the best biz on the 8-bits in terms of graphics.

● GAMEPLAY

You commence play with four lives and a mission to clear thirty levels of everything that moves and pick up plasma cells on the way to replenish your lives. Controlling your skimmer/tank you'd better hit fire to take out the countless projectiles, missiles, mines, fighters and obstacles you're up against.

● GRAPHICS AND SOUND

Not a bad outing on the CPC with neat isometric graphics and dead smooth.

Accompanying sound effects and music are well above average.

● OTHER VERSIONS

The Spectrum version is above average too but doesn't include the music of the CPC – the accompanying laser sound effect's a sort of curious squeaking.

● EXPRESS VERDICT

A straight down the line shoot-'em-up which, while astonishing in no departments, is sufficiently accomplished to make it worth a look.

✪ ✪ ✪ **Andy Storer**

STEEL THUNDER

ACCOLADE

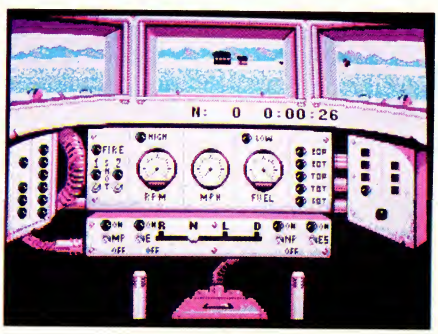
PC £24.95 dk
Out soon on C64 disk

Reds under the bed? Go out blastin' in Accolade's *Steel Thunder* tank thrash. Elevate your Howitzer and give 'em what for...

TIRED PLOT

● GAMEPLAY

The game pitches you – as an American tank commander – against red enemies based in Cuba, Syria and West Germany. Before the carnage begins, you must identify yourself to the station commander. Your first mission is an assignment to Cuba. The station commander gives you the low-down on the weaponry in use by the Cubans, and you're warned about their choppers and bogs. After the briefing room, you select extra weapons and then your in the tank, looking at Cuba through a slit and wondering who to kill first. Medals can be won by completing your assignment and rank increases after each mission. Only those with frontline skills in maiming, destruction and death reach the dizzy heights of Major and are allowed to blow away West Germany.



• CGA: Cyan red or in a purple rage as you chase the commies?

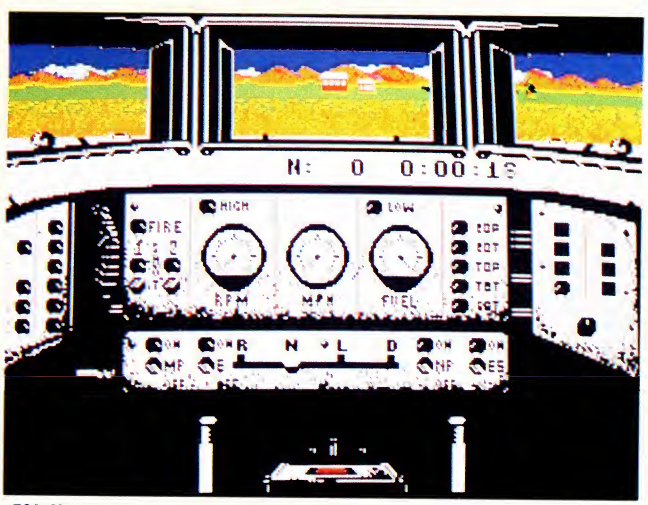
● GRAPHICS AND SOUND

You're greeted with an appallingly twee rendition of *The Stars and Stripes* which will either have you standing up to salute or bending down to honk. The rest of the game's sounds will have you struggling for the 'sound-off' key combination.

Graphics inside the tank are reasonable. There's an instrument panel with moving pointers, lights that flick on and off and moving control levers, but the landscape through the viewing slit is of the scrolling brown and blue with unidentifiable globules dotted around variety.

● OTHER VERSIONS

C64, disk owning, commie bashers will soon have the chance to play *Steel Thunder*. Other micro versions are currently under consideration.



• EGA: More colours, but only through the window (slot?)

● EXPRESS VERDICT

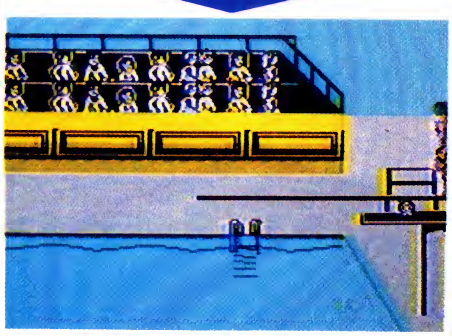
Tired plot, right kids? If it's not aliens, it's reds. Some of my best friends are aliens and only occasionally want to take over planets, and as for reds, well, they're far too concerned about convincing the world of the benefits of nuclear disarmament right now to concern themselves with taking over the States. Still, if you're uninterested in social awareness, or just enjoy butchery this may be for you. The game has moderate depth of play – i.e. it takes forever to learn how to control the tank – and there's a modicum of excitement.

✪ ✪ **Fielding Mellish**

THE GAMES: SUMMER EDITION

EPYX

Spectrum .c 8.99 d 12.99
Also on C64, CPC



• About to take a nose-dive – and that's just the gameplay

Armchair athletes still not stuffed to the gills with sports sims now have the chance to play the latest compo from US Gold. Already out on the C64 late last year, the Spectrum version has only just reached the shops. Is it worth a waggle?

● GAMEPLAY

You get to either practice or play in nine events ranging from the reasonably sedate (archery) to the frantic (hurdles). Each event involves careful timing with joystick and fire button, plus the usual manic joystick manipulation usually associated with the genre. Five minutes of this and you'll have your joystick arm dangling like a soggy salami, and the neighbours covering their children's eyes. You'll also *feel* like a...well, fool.

The instructions feature detailed hints and tips on how to optimise your performance – but alas not how to while away the minutes while you're waiting for the next section to load in from cassette.

● GRAPHICS AND SOUND

Animation frames are few and far between, and the whole lot moves sluggishly. Dismal stuff, even for the Spectrum. Sound effects are functional rather than inspired.

● OTHER VERSIONS

The C64 version is by far the best of the bunch, while the Spectrum is well and truly at the bottom of the heap. Also out on the CPC, there's an ST version on its way soon.

● EXPRESS VERDICT

This game has it all, in the worst possible sense. Awful graphics, tedious gameplay and – groan – multiload. The only event not included is the marathon – hardly necessary, since the effort of plodding through the whole lot makes a marathon look like a run for the bus.

✪ **Rod Lawton**

The incredible New Computer Express voucher scheme can save you over £10 when you buy from adverts in this magazine!

Full details on next page

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How the scheme works

- **The Express voucher is a special scheme to encourage you to buy New Computer Express regularly.**
- **It offers you savings of up to £10 when you buy goods through the magazine.**
- **The vouchers are not limited to specific items – you can save on any purchase from one of the participating advertisers.**
- **Most mail order advertisers in this magazine are taking part in the scheme – just look for this sign. →**

- **Remember. The use of just one voucher could more than recoup the price of the magazine.**

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2. Each voucher entitles you to a discount at the voucher's face value, **provided** that your overall order level is **higher** than the figure indicated on the back of the voucher.

3. To use a voucher, simply enclose it with your discounted payment when you order. You may use **only one** voucher in any one order.

4. The order including the voucher must be received by the advertiser before the closing date printed on the voucher.

5. **You must** fill in the details requested on the voucher.

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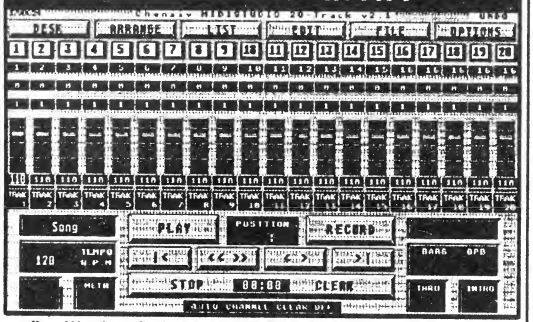
This company has given years of full support to Atari users from their retail premises at 33 Ormskirk Road Preston. Now from their Mail Order premises they can offer this " second to none " service to users country wide. All Software/Hardware is ex-stock and fully tested prior to purchase to ensure that returned goods are now a thing of the past. All hardware is supported by our on site engineers so that quick turn around on all repairs is guaranteed. There are no hidden extras WYSIWYG. ALL PRICES INCLUDE VAT AND DELIVERY (next day delivery +£3 for purchases over £100)add £2.50 delivery charge for purchases under £100). All prices are correct at time of going to press and are subject to change without prior notice. Phone for latest prices, information and advice(we are always happy to help.)

NEW LOW PRICES NEW LOW PRICES NEW LOW PRICES NEW LOW PRICES

MIDISTUDIO £99.99



" will give Steinberg's Pro 24 a run for it's money " ST WORLD March 89

Midistudio is an attractively priced 20 track Midi Sequencing package. It can record up to 682 bars per phrase(pattern) on up to 100 phrases. Any phrase can be placed on any track. Tracks can be soloed and muted and tracks and phrases can be named. Program numbers can be displayed in a variety of ways including 0-127, 1-128, in banks from a11-b88 or a01-b64. The desk features sliders to set relative volumes on each track and you can even do a mix on the fly. Midistudio also has a clock to display the length of the last playback. Midistudio has step time note edit functions including copy, split, merge, append, and transpose, velocity editing(including a humanize function), full controller editing, quantizing and a buffer which will store a copy of a phrase for recall after destructive editing.

L.C.I SOFTWARE

ADD WITH OSCAR £12.99
Add with Oscar is a fully mouse controlled educational game with full colour screens and sound for teaching addition, subtraction, multiplication and division to children.

SPELL WITH OSCAR £12.99
Spell with Oscar is a game which teaches spelling, keyboard skills and motor coordination. Pictures of objects move smoothly accross the screen and the pupil should spell the name of the object while Oscar checks for mistakes. **Extra data disks £6.99**

AB ANIMATOR £5.99
AB Animator is a utility for creating and animating sprites. It supports GFA, HISOFT and FAST basics and is compatible with degas and neochrome picture files.

TRILOGY £5.99
Trilogy consists of Quick list plus, a directory database compiler, Mastermat a custom formatter and copy protection utility, and Picstrip is a utility that captures all or part of a picture file for use in Basic programs, supports GFA, FAST, HISOFT and ST Basics and is Degas, Neochrome and AB Animator compatible.

All Dealer enquiries to LEISURESOFT LIMITED, Sketty close Brackmills Business Park, Northampton, NN4 OPL. Tel : (0604) 768711

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The Image Scanner can provide high quality graphics digitising for a tenth of the cost of other digitisers. This simple unit plugs into the cartridge port of the ST and accepts scanned information via optical cables which fix easily to the head of any printer. Scanned images can be saved in raw data, Degas and Neochrome formats. The Software supports scanning resolutions of 75,150,216,300,360 and 1000 dots per inch horizontally. An example disk is available which contains a slide show of images scanned with this product. The cost of this disk is £3.99, £2.00 of which is redeemable on purchase of a scanner.

Printers

Star LC 10	£189.99
Star LC 10 Colour	£249.99
Star LC 24/10	£339.99
Epson LQ 500	£359.99
Citizen 120 D	£139.99
SLM 804 Laser	£1299

All printers come complete with Parallel cable.

Hard drives and Interfaces

Megafile 30	£449.99
Megafile 60	£619.99
Supra 30MB	£475
Interface	£99.99

Our Hard drive interface includes DMA, clock, works with Atari, Supra. Uses SCSI drives. For MFM or RLL add £50. For box and power supply add £89.99. **100 % compatability.**

Cumana Disk drives

Cumana 1Mg Drive(ST & Amiga)....£89.99
Cumana internal 1Mg Drive(ST) (kit or fitted) £89.99
Please note ST's case may need cutting for above internal drives.
Amiga 1 Mg Drive, disable switch & through port.....£85.99
A/B boot switch (fitted).....£24.99
Triangle drives phone

Peripherals & Dust Covers

Pro Draw Tablet		phone	Computers	£3.99
CRP Tablets	A4	£414	Monitors	£4.99
	A3	£818	Disk Drives	£2.99
Hawk scanner		£1250	Hard Disks	£4.99
Atari Traker ball		£24.99	Printers	£7.99
PRO 5000 joystick		£8.99	Others	phone

Phone for prices on all SIGNA products such as Colibri hand scanner with or without OCR, Signum 2, Augur OCR.

Monitors

SM 124 Monochrome Monitor.	£109.99
SC 1224 Colour Monitor.	£299.99
Phillips 8833 Colour Monitor.	£229.99
Phillips 8852 Colour Monitor.	£259.99
Phillips 15" Remote, Scart, Tv with 40 tuner presets.	£229.99

Monitors, deduct £10 if bought with Computer phone for Tv's. All monitors come with scart to ST/Amiga etc.

Quality Disks

All our disks are top quality Sony or Maxcell products, not cheap imports. We buy bulk and pass the saving onto the customer. All disks carry an unconditional lifetime guarantee.

Quantity	3.5" D/S	5.25" D/S Q/D 96 TPI
10	£9.99	£6.50
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100	£95	£60
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REPAIRS

Our Atari trained engineers can repair all hardware in minimum time at competetive prices. We can arrange Pickup for prompt delivery to ourselves for **£11.50.** Next day return courier delivery **£8.00.**

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1 Mg STM (fitted)	£124.99	Upgrade board (Unpopulated)(fitted)	£60
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Please check machine configuration before ordering. All fitting prices quoted for machines not previously tampered with. The upgrade board can be progressively upgraded to a maximum of 2.5 MB. Due to the complexity of the installation we must install and upgrade the board for you. All upgrades and repairs carry our 3 months parts and labour guarantee. Pre 1988 machines can only be upgraded to 2 MB.

Software

At Least 20% discount off all 16 bit games software.

E.G.	*RRP*	*Our Price*
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Send an SAE to address above for full software catalogue. Phone for best prices.

We are continuing our excellent quality software club which will give members the benefit of at least 15% discount off all software other than games and our rapidly improving free disk based magazine which will include reviews, hints on games and programming, PD software and special reductions of up to 60% in the future. We must however increase the price to £25 per year. This does not affect current members.

Computer Systems and Packs

520 STFM Explorer Pack £259.99
Includes Atari 520 STFM with 1/2 Mg Memory, 1 Mg drive and mouse. Includes tutorial disk.

520 STFM Super Pack £334.99
Includes Atari 520 STFM with 1/2 Mg Memory, 1 Mg drive, mouse, joystick and a software pack including organiser software and 21 top quality games.

520 STFM Power Pack £349.99
Includes Atari 520 STFM with 1/2 Mg Memory, 1 Mg drive, mouse, joystick and software pack consisting of organiser software First BASIC, First Music and a selection of 20 top quality games.

1040 STFM Super Pack £449.99
Includes Atari 1040 STFM with 1 Mg Memory and drive and a choice of software packs which include a business pack with database, word processing, spreadsheet and BASIC software, a Midi pack with Pro 12, and a games pack with 21 top quality games.

Amiga A500 Pack £369.99
Includes best selling Amiga A500 computer with 1/2 Mg memory 1 Mg drive, mouse and Tenstar software pack worth £200.

Atari Mega ST 1+Mono Mon £599.99
The new Mega ST 1 includes separate keyboard and cpu, Blitter chip, clock, 1 MB RAM, mouse and a business software pack including database, word processor, spreadsheet and BASIC software.

Atari Mega ST 2+Mono Mon £849
The Mega ST 2 includes seperate keyboard and cpu, Blitter chip, 2 MB RAM and mouse. The Mega ST 2 also includes a realtime battery backed clock.

Atari Mega ST 4+Mono Mon £1099
The Mega ST 4 includes seperate keyboard and cpu, Blitter chip, 4 MB RAM and mouse. The Mega ST 4 also includes a realtime battery backed clock.

DTP Pack 1 £phone
This pack consists of Mega 2, external 3.5" drive, SLM 804 Laser printer, Mono monitor,DTP software, 90 days on site maintenance.

DTP Pack 2 £phone
This pack consists of Mega 4, Megafile 30 hard drive, SLM 804 Laser printer, Mono monitor, DTP software and 90 days on site maintenance.

Atari PC 4 £1655
The PC 4 has an 80286 processor running at 8 or 12 MHz, 1 MB of RAM,60 MB hard drive, 5 AT and 1 XT expansion slots. For Mono monitor add £100. Phone for others.

Atari PC 5 £2690
The PC 5 has an 80386 processor running at 16 MHz, math coprocessor socket, 64K cache memory, 2 MB RAM, 60 MB hard disk with high performance controller, 4 AT and 1 XT slots. For Mono monitor add £100.

Access **(0772) 203166 or 21474** VISA

Ladbroke Computing International is a trading name of Walton Marketing Limited.

Gooseberry fool

David Langford eavesdrops on a brainstorming session

OK, we're here today to discuss the launch campaign for the Gooseberry PC. As you know, it's an exciting product, a very sexy concept altogether. The keynote is that our company *cares* and this computer is *different*. I want you to ram home the message that it's not just another cheap IBM clone.

What?

Well, of course it's 100% bloody IBM compatible! But different. Better. Innovative.

The purple keyboard and case, for a start. Streamlined, economy-size memory as compared to overmuscled rivals. And a radical, ground-breaking design which will set new standards in mains cables. By no means just another cheap clone. If nothing else, it's too expensive.

Oh, lots more selling points. Hotline support: we've installed two extra phone outlets and an answering machine. *Safety* – a brand-new angle – our R&D boys have throttled down the processor speed so programs can't run dangerously fast. Like a Volvo, you know. Built to survive crashes.

Now, the campaign. This is just a rough idea, but how I see it is, we have a big colour pic of the Gooseberry....

Yes, I know production's eighteen months behind. Use your imagination. Buy an Amstrad and spray it purple. And sitting lazily in front of it, this big-breasted, hot-eyed blonde in suspenders and black fishnet stockings, under a grabbing headline like EVEN YOUR DUMB SECRETARY COULD USE THE GOOSEBERRY PC.

We're targetting high flyers in middle management, you see.

No, the Advertising Standards Authority can't crack down on us for not including a voluptuous flaxen-haired model with every Gooseberry sale. There must have been a test case some time.

Right. Good idea. We show the bimbo taking dictation from a really cool executive type in a classy suit and mirrorshades. Gucci shoes. Gucci Filofax. That should establish the image.

Point taken. You *can* play games on it too... R&D are keen on bundling their implementation of *Space Invaders* as an interpreted BASIC text adventure... so we need to put in a kid. I reckon that finalizes the campaign.

Oh. D'you really think so? We've never tried to project *that* caring an image before. I suppose it would fit with a pun about the colour display.... OK, we'll make the kid black.

And disabled?

And... none of *that*. Think of Section 28. Besides, you can't indicate a liberal attitude to sexual preferences in an impactful ad. What do you want, another executive in a pink shirt holding hands with the first one?

Well, maybe it could be done tastefully....

Yes, yes, more good points. We want to avoid unjustified accusations of sexism. And ageism. But I must exercise my veto. I do *not* think the solution is to have the Gooseberry being operated by a voluptuous, underwear-clad model just under retirement age.

Try this. To show the girl's an intellectual, have her running something more intricate than a word processor. A *Lotus 1-2-3* spreadsheet, maybe. I know the Gooseberry's 100% compatibility doesn't actually extend yet to any version of *Lotus*, but it's only a sodding screen shot, for goodness' sake! Clip it from another ad.

No, darling, I don't think the British public is ready for a cool, handsome executive in his underwear entering spreadsheet data for a busty blonde executive in pinstripes. You're trying to score a subtle point, aren't you...? I'm prepared to meet feminists halfway and stress this Page Three raver's intellectual competence by having her wear glasses in the ad. They could be dark glasses, showing how we care about equal opportunities for the blind... no, p'raps not.

The way this is shaping up, you know, we could be in line for one of those awards for integrity in advertising. Maybe I could drop a few subtle hints. Like free Gooseberry PCs and crates of single malt to all the independent judging committees.

Any other input, anybody? Tell you what, while our caring, equal-opportunity tea lady is handing out the cups, everyone write down their best suggestion. Watch out for boo-boos in your copy.

Like, ever heard of the hardware brand Micropolis? One of our consultants knows some Greek, she translates it as Micro City. Which is OK, only some smartarse designer used the wrong capital O. Instead of omicron they put omega, you know, the ohm sign, and when you spell it *that* way it means something like Low Sales. I don't want any mistakes like that – you end up having your leg pulled on the back pages of computer mags. Bastards.

Or there was Wang. The story was, their American publicity people put full-page ads in the British trade press without consulting any Brits about the headline. Two dynamic words. WANG CARES.

Well, it depends how you pronounce it, darling.

Right, end of break! Let's put together these zesty ideas, run it up the memory map and see if it hangs!

OK. Basically, for the caring egalitarian image, it looks like we need beautifully shaped and scantily clad female *and* male typists playing a composition for four hands on the Gooseberry keyboard, surrounded by a typical company workforce, 50% female, including representative black, Asian, Oriental, gay, disabled, elderly, Welsh, Scots, mentally impaired, under-15 and unemployed executives.

A cat and a dog too, maybe. But even if it would capture a market, our budget won't run to a whale.

This could be a first in campaigning. Let's rough out a sketch.

Yep, I think we can fit it all in, provided we lose the computer. Why not? After all, only some dull yob who knows nothing about advertising would base a buying decision on the actual computer...

Next Week

The £25 micro

At last the story can be told: the amazing bargain world of computer auctions

User groups

The nationwide Express guide

BASIC

The best ways to get programming

Atari 8 bit

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On sale Thursday June 1st

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* NEW* ATARI 520 STFM 1 Meg Drive + Power Pack	£349.99
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ATARI 1040 STFM + Steinberg Pro-12	£439.99
* NEW * MEG 1 ST Inc. Professional Pack	£529.99

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AMIGA 500 Inc. 1/2 RAM Expansion + Dragon's Lair	£489.99
AMIGA 500 + 1084S Med. Res. Colour Monitor	£589.99
AMIGA AIR MILES PACK Inc. (Same as Before)	£439.99

AMIGA

NEW ★ SPECIAL PACK

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Disk Drive Cleaner (3.5 or 5.25)	£4.95
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Pac-Land	£16.50	£13.50
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R-Type	£17.50	£13.99
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Rocket Ranger	£19.50	Out Soon
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Steve Davis Snooker	£14.99	£14.99
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Zak McKraken	£17.50	£17.50
3D Pool	£16.50	£16.50
Test Drive II	£20.99	--.--
Battlechess	£17.99	£17.99
Airborne Ranger	--.--	£17.99
Cybernoid II	£13.50	£13.50
Deja Vu II	--.--	£18.50
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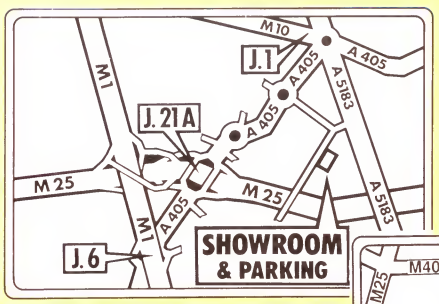

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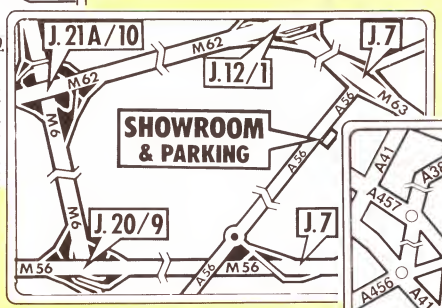

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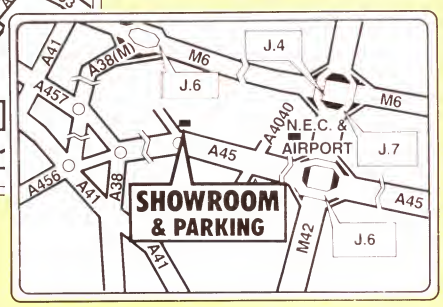

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